PART 162-03 RIVERS CLASSIFICATIONS

03-01 DEVELOPMENT OF CLASSIFICATIONS

In its endeavor to classify the rivers in the state, the Rivers Council's approach focused on the availability and utilization of existing resources. The classification process included a review of the existing and potential uses of the rivers, DEM's water quality standards, and meetings with the public and interested parties.

03-02 CLASSIFICATION SYSTEM

The Federal Clean Water Act established a goal that the waters of the United States should be swimmable and fishable. The state's DEM has been delegated authority to regulate water resources to achieve this federally established goal. However, for a variety of reasons, actual water quality in a river, or river segment, may not meet the established swimmable-fishable standard.

In keeping with that goal, the Rivers Council has worked to develop a classification system which will promote the establishment of river and adjacent land uses that work toward the attainment of the swimmable-fishable goals. The designations in the *Rivers Policy and Classification Plan* must be consistent with the DEM classifications so that uses are not promoted or proposed that could place public health or environmental integrity at risk. Differing from the DEM classification system, the Rivers Council attempted to classify the freshwater rivers of the state in a holistic approach by integrating water quality objectives with land uses and land use management. As such, the following classifications are based on the use and potential use of rivers and watersheds, land use, habitat, open space values, historic and cultural values, as well as water quality.

Rhode Island law, Section 46-28-7(d), specifies that the classification plan of the Rivers Council contain a minimum of three classes: pristine rivers, recreational rivers, and working rivers. The Council has expanded on the minimum requirement and developed five classes: pristine; water supplies; recreational open space; recreational multiple use; and working rivers.

Discussed within the various classifications are the terms contact and non-contact recreational uses. Contact uses means there is prolonged contact with the waterbody. Examples of contact recreational uses are swimming, wading, and water-based fishing. Non-contact uses involve minimal contact with the water and include canoeing, boating, and land-based recreational activities. The Council followed a policy of recommending contact versus non-contact recreational uses based upon not only knowledge of bacterial levels within the water but also on known or potential toxic pollutant threats from current land-based activities. Where a river or river segment is classified as suitable for swimming and other contact recreational activities, it can be surmised that the river or river

segment is also suitable for canoeing or other non-contact recreational activities. The only caveat to this logic would be if there is enough flow or water in the river segment to physically allow these activities to occur. The Council has attempted to note such low flow areas within the individual classifications.

I. Pristine Rivers These rivers or river segments include Wild/Natural Rivers, which are those rivers or sections of rivers that are free of impoundments and are generally inaccessible except by trail, with watersheds or shorelines essentially undisturbed and primitive, and water relatively clean. They also include Significant Wildlife Habitat and Natural Area Rivers, which are rivers, lakes, streams, tributaries, and their associated wetlands that support communities of flora or fauna significant or unusual to Rhode Island. This includes unique critical habitat with rare or endangered species notwithstanding lower than high water quality conditions. Pristine rivers may include Special Resource Protection Waters (SRPWs).

II. Water Supplies These are surface public drinking water sources, which include:

- rivers, impoundments, and lakes used for water supply purposes; and/or
- tributaries to water supplies; and/or
- areas officially designated as potential public drinking water supplies.

These waters may include watersheds that directly feed or replenish existing and/or potential public drinking water supplies.

III. Recreational Open Space Rivers These rivers, or river segments, with relatively undeveloped banks, support or could support recreational use and are typically situated in rural Rhode Island, although they may traverse historic village centers. They include:

- rivers suitable for contact recreation such as swimming and fishing; and/or
- rivers suitable for non-contact recreation such as canoeing; and/or
- rivers that function as open space corridors, natural areas, or greenways.

IV. Recreational Multiple Use Rivers These are rivers or river segments with developed banks in urban and suburban areas that are typically suitable for canoeing and other non-contact recreational activities. They may function as open space corridors or greenways.

V. Working Rivers These rivers or river segments are readily accessible, have development along their shorelines, have undergone impoundment or diversion, and adjoin development that may be classified as urban.

03-03 CLASSIFICATIONS BY WATERSHED

This section of the Plan describes the state's major watersheds, as well as their respective segments. Following the description, the segment classification is noted in parentheses.

03-03-01 Blackstone River Watershed

The Blackstone River Valley, in northern Rhode Island and Massachusetts, is the birthplace of the industrial revolution in the United States. The Valley's national, historical and cultural importance has been recognized by Congress through the creation of the Blackstone River Valley National Heritage Corridor. Not only did the America's textile industry begin along the banks of the Blackstone, but it flourished there as well. At the turn of the century, it was claimed that the Blackstone was "the hardest working river, the most thoroughly harnessed to the mill wheels of labor in the United States, probably the world...."*(Blackstone River Valley National Heritage Corridor Commission and State Planning Council, State of Rhode Island and Providence Plantations, Cultural Heritage and Land Management Plan for the Blackstone River Valley National Heritage Corridor, September 1990, p. iv)*

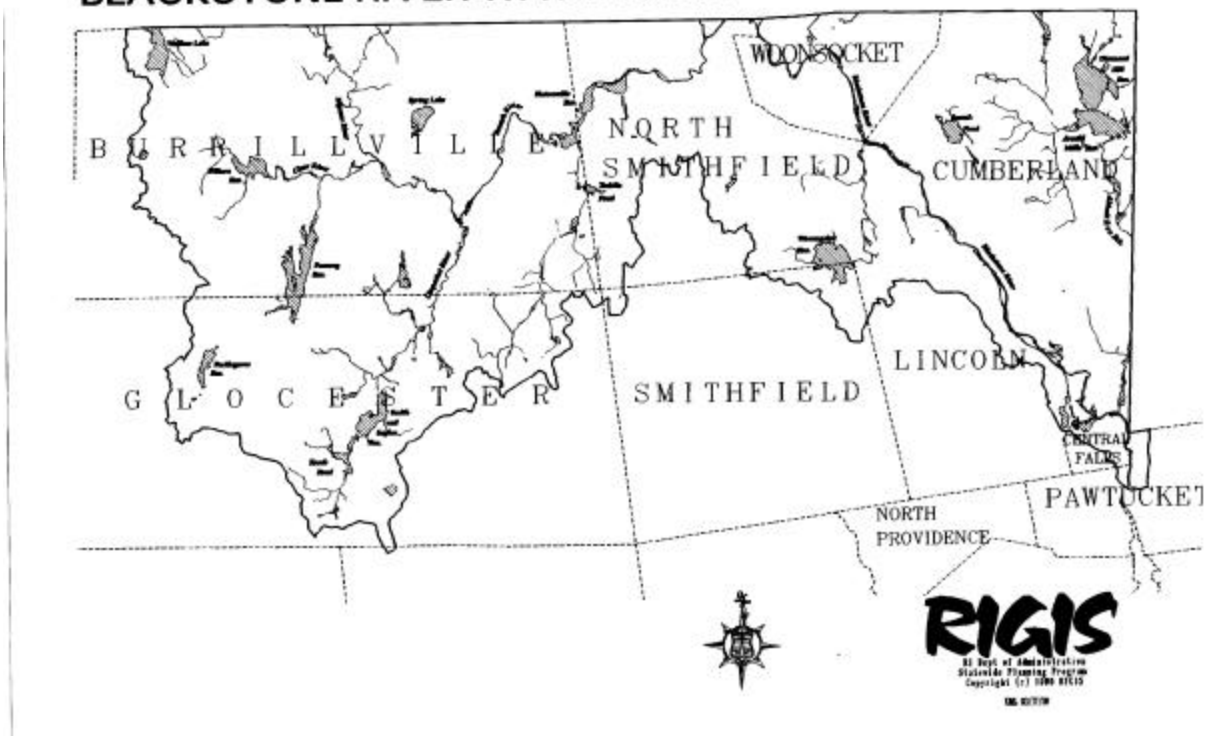
The Blackstone River Valley National Heritage Corridor Commission has stated, "The Blackstone River Valley is one of the Nation's richest and best preserved repositories of landscapes, structures, and sites that recall a neglected era of the American past: the Age of Industry" *(Ibid., p.1).* Regarding the Heritage Corridor, the Commission has noted, "The Blackstone River Valley is an unusual 'park' because it is a living, human environment.... The Valley is the real thing...."(*Ibid., p. 1)*.

There are both a proud and a sad legacy from the Age of Industry. The proud legacy is an extraordinary heritage; the sad legacy is one of industrial pollution and a period of economic decline. The Blackstone River was once principally a source of power and secondarily a way to dispose of waste--it was regarded as one of the nation's most polluted rivers. Now, the river is perceived as a cultural and environmental asset. The Blackstone Valley has a vibrant Tourism Council that offers interpreted and historical river boat tours.

In total, the Blackstone River watershed comprises approximately 472 square miles, most of which (373 square miles) is in Massachusetts. In Rhode Island, the watershed encompasses all or a portion of the following communities: Burrillville, Central Falls, Cumberland, Glocester, Lincoln, North Smithfield, Pawtucket, Smithfield, and Woonsocket (see Figure 162-03(01)).

FIGURE 162-03(01)

BLACKSTONE RIVER WATERSHED



Interstate water pollution control is a major issue on the Blackstone. The headwaters are in Worcester, and the Upper Blackstone Water Pollution Abatement District facility in Worcester is the largest single source of pollution entering the river. Water quality degradation, however, is no longer accepted or overlooked, as exemplified by the Interstate Blackstone River Initiative being conducted by Massachusetts DEP, RIDEM, and EPA.

In Rhode Island, the rivers, streams, reservoirs, and ponds in the watershed supply public drinking water; provide recreational opportunities including swimming, boating, and fishing; provide source water for power plant cooling and other industrial purposes; power hydro-electric facilities; and serve as the receiving body for permitted wastewater discharges. This diversity of uses is the greatest of any Rhode Island watershed. This marvelous and historical diversity is also a cause of conflict as the multiple uses often compete with each other. Stresses and problems in the watershed are numerous and include: contaminated sediments; the impact of permitted wastewater discharges on downstream water quality; the presence of hazardous waste sites, old dumps, and landfills that cause nonpoint source pollution; nonpoint sources of pollution that affect habitat and water quality and threaten drinking water supplies; and water withdrawals.

Nevertheless, conditions on the Blackstone River itself are improving. Governmental and public efforts to reduce pollution and protect water resources are having an effect, and the healing processes of nature are at work. Fishing is being restored, new parks developed, and canoeing and boating increasing, even in urban areas. Expectations for the Blackstone River as a natural resource and an environmental asset are rising. The river classifications support this upward trend.

Segment Classifications in the Blackstone River Watershed

1.**Wallum Lake** is a drinking water supply for Zambarano Hospital, but is approved for contact recreational use in Massachusetts (swimming and boating). Hunting and hiking are supported within the Buck Hill Wildlife Management Area and the Douglas State Forest in Massachusetts. Since Wallum Lake is a drinking water supply, there is a buffer zone around the Rhode Island portion of the lake; swimming and fishing from Buck Hill are not allowed. Endangered species are documented in the eastern and southern high-quality tributary streams to the Lake. ***(Water Supply)***

2.Three quarters of a mile downstream from Wallum Lake to a point one-half mile above Wilson Reservoir, the **Clear River** is the receiving water for a permitted wastewater discharge from Zambarano Hospital. This segment has limited recreation potential but is valued as open space and for habitat resources. ***(Recreational Open Space)***

3.Located in central Burrillville, the **Wilson Reservoir** is used for recreation and open space. Although suitable for swimming and boating, these recreational uses are threatened by the presence of failed or poorly functioning septic systems. ***(Recreational Open Space)***

4.The **Pascoag Reservoir**, also known as Echo Lake, is situated in south-central Burrillville. It is suitable for contact recreation (swimming and fishing) and has two state boat ramps. The **Pascoag River** and its tributaries to its confluence with the Clear River are also valued as recreational open space. ***(Recreational Open Space)***

5.The **Nipmuc River and Pond** are located in north central Burrillville and are generally inaccessible. These pristine water bodies are valued as open space. ***(Pristine)***

6.The **Clear River** from Wilson Reservoir to its confluence with the Chepachet River is suitable for recreation; however, use is limited by low flows. In the last mile of the river, contact recreational activities are limited due to the permitted wastewater discharge from the Burrillville Wastewater Treatment Facility. ***(Recreational Open Space)***

7.**Spring Lake** is suitable for recreational swimming and boating. ***(Recreational Open Space)***

8.**Smith & Sayles Reservoir** and **Keech Pond** are located in Glocester and are suitable for swimming and boating, as well as fishing. Critical habitat areas are located at the northeast end of the Reservoir. ***(Recreational Open Space)***

9.The **Chepachet River** and its tributaries from Smith and Sayles Reservoir in Glocester to its confluence with the Clear and Branch Rivers are stocked for fishing and have open space value. ***(Recreational Open Space)***

10.The **Tarkiln River and Pond** are located in Glocester and Burrillville. The pond is used for fishing; both the pond and river have recreational open space value. ***(Recreational Open Space)***

11.The **Branch River** from its confluence with the Clear and Chepachet Rivers to the Slatersville Reservoir is suitable for swimming and fishing. It has recreational open space value, and mill villages are located along its corridor. ***Recreational Open Space)***

12.**Slatersville Reservoir**(both upper and lower) has recreational value and is designated as swimmable and fishable. It has a state boat ramp and fishing club access. Its current condition with respect to contact recreation is, however, marginal due to coliform and metals levels that exceed state standards. The Land Resource and Recovery landfill superfund site is located near the Slatersville Reservoir. ***(Recreational Open Space)***

13.The **Branch River**, from the Slatersville Reservoir to its confluence with the Blackstone River at the Blackstone Gorge in the Town of North Smithfield, has scenic and open space value with mill villages located along the river corridor. It is suitable for non-contact recreation. ***(Recreational Multiple Use)***

14.The **Blackstone River** from the Blackstone Gorge to the Rhode Island state line is suitable for non-contact recreation. White-water rafting is occasionally possible in this segment. The Massachusetts and Rhode Island DEMs have purchased the riverbanks on both sides of the Gorge, where a bi-state park will be developed. ***(Recreational Open Space)***

15.The **Blackstone River** from the Rhode Island state line to Thundermist Falls in Woonsocket is suitable for non-contact recreational activities. Mills with historical value are located along the river corridor. The Ocean State Power Plant, located in Burrillville, has a withdrawal pipe just upstream of the Thundermist Dam. ***(Recreational Multiple Use)***

16.The **Blackstone River** from the Thundermist Falls to Manville Dam is a multiple use urbanized open space with significant recreational value. Primary contact recreational activities are limited immediately downstream of the permitted discharge from the Woonsocket Wastewater Treatment Facility. ***(Recreational Multiple Use)***

17.The **Woonsocket Reservoirs and Crookfall Brook** and its tributaries are components of a public drinking water supply. The main reservoir, identified as Reservoir No. 3, is located in Smithfield and North Smithfield. Crookfall Brook conveys water from Reservoir No. 3 through Reservoir No. 2 to Reservoir No. 1, the terminal reservoir and the water treatment facility. Mill sites, historical resources, and archeological remains can be found along the Crookfall Brook corridor. (***Water Supply)***

18.**Sneech Pond** is a public drinking water supply for the Town of Cumberland. It is noted for its unique aquatic habitat value. ***(Water Supply)***

19.**Diamond Hill Reservoir, Arnold Mills Reservoir, Abbott Run, and Happy Hollow Reservoir** are components of the City of Pawtucket's water supply system. The water quality in Abbott Run, which flows into Massachusetts and returns to Rhode Island, is threatened due to urban development. ***(Water Supply)***

20.The **Blackstone River** from Manville Dam to the Valley Falls Marsh is classified as non-contact recreational. There are historic mills between Manville and Valley Falls. This river segment includes the Blackstone River State Park, as well as other local parks that provide open space. ***(Recreational Open Space)***

21.**Valley Falls Marsh**, identified as an important wetland system in Rhode Island, provides open space and valuable habitat in a relatively urbanized setting. Located north of the City of Central Falls in the Towns of Lincoln and Cumberland, it is the largest freshwater wetland in northern Rhode Island. From the Blackstone River, there is boat access to the marsh for fishing. ***(Recreational Open Space)***

22.The **Blackstone River**, from the Valley Falls Marsh to the Main Street Bridge in Pawtucket, is classified for multiple use in an urbanized open space. In addition to its historic value, this segment provides the setting for local parks, as well as the Slater Mill. ***(Recreational Multiple Use)***

03-03-02 Woonasquatucket River Watershed

The Woonasquatucket River has its headwaters in Smithfield and flows through North Providence, Johnston, and Providence to its confluence with the Moshassuck River. The watershed encompasses portions of the following communities:Glocester, Johnston, North Providence, North Smithfield, Providence, and Smithfield (see Figure 162-03(02)).

The Woonasquatucket River was heavily used during the 19th century and has been profoundly altered by its industrial heritage. The streams feeding the Woonasquatucket in Smithfield were dammed to create water supplies for mills. Although the mills no longer operate, the reservoirs remain and their function now serves multiple recreational uses.

From Greystone (a hamlet on the Smithfield/North Providence border) to Providence, the river is predominantly urban. In the Providence/Johnston area there are underdeveloped parks offering wonderful potential for a greenway system. The National Park Service, River and Trails Program, is currently working with a broad coalition of advocates in Providence to create an urban greenway with bike paths and access points on the Woonasquatucket.

Segment Classifications in the Woonasquatucket River Watershed

1.**Waterman Reservoir, Stillwater Reservoir, and Georgiaville Pond** are suitable and used for swimming and boating. Other numerous impounded tributaries in the Greenville and Georgiaville areas of Smithfield (Slack, Upper and Lower Sprague, Woonasquatucket Reservoirs) are also designated recreational and suitable for swimming and boating. ***(Recreational Open Space)***

2.The **Woonasquatucket River**, from Georgiaville Pond to the Smithfield/North Providence line, is designated recreational multiple use due to the permitted discharge from the Smithfield Wastewater Treatment Facility which is located just north of the North Providence town line. ***(Recreational Multiple Use)***

3.The **Woonasquatucket River** from the Smithfield/North Providence line to the dam at Doningian Park (where the river becomes tidal) is a recreational multiple use river.

Figure 162-03(02)

This area is influenced by the permitted discharge from the Smithfield WastewaterTreatment Facility and Combined Sewer Overflows in the Providence area and is, therefore, suitable for non-contact recreational activities. Dyerville State Park is located along the Johnston/Providence segment. Resources include the development of a greenway and brownfield sites. A diversity of wetlands provides habitat for urban flora and fauna with rare plant species along an adjacent railroad right-of-way. ***(Recreational Multiple Use)***

03-03-03 Moshassuck River Watershed

The Moshassuck River has its headwaters in the Lime Rock area of Lincoln. The watershed is located in portions of the following communities: Central Falls, Lincoln, North Providence, Pawtucket, Providence, and Smithfield (see Figure 162-03(03)).

The water is very "sweet," which gives rise to habitat conditions unusual to Rhode Island. In southern Lincoln, Olney Pond, which is located in Lincoln Woods State Park, is within the watershed. This is an important public recreational resource within the greater Providence/Pawtucket urban area.

After passing through the village of Saylesville, the river becomes heavily urbanized, and its resource value is virtually obliterated as it passes through culverts adjacent to and under route I-95 in Pawtucket. Historically, this portion of the Moshassuck River was significant as part of the Blackstone Canal, and is included in the Blackstone River Valley National Heritage Corridor. The Moshassuck joins the Woonasquatucket River southeast of the State House in downtown Providence and was central to the city's recent river relocation project.

A tributary of the Moshassuck, the West River, has similar conditions. The West River has recreational value in North Providence and Lincoln, and Geneva Pond is a popular swimming area. The river, however, becomes heavily urbanized as it flows through Providence, though not so entirely obliterated as the Moshassuck.

Segment Classifications in the Moshassuck River Watershed

1.The headwaters of the **Moshassuck River** are upstream of Olney Pond. This pristine segment flows through lime rock preserves and is a potential water supply at the quarry site. ***(Pristine)***

2.**Butterfly Pond**, located in Lincoln at the intersection of Breakneck Hill Road and Great Road just upstream from the site of the historic Butterfly Mill, is designated as pristine. ***(Pristine)***

3.**Barney Pond and Bleachery Pond** are suitable for fishing and boating. ***(Recreational Open Space)***

Figure 162-03(03)

4.**Olney Pond**, located in Lincoln Woods State Park, is suitable for swimming. ***(Recreational Open Space)***

5.From Barney Pond to Weeden Street in Pawtucket, the **Moshassuck River** is designated as a recreational multiple use river with open space values. ***(Recreational Multiple Use)***

6.From Weeden Street to the dam south of Moshassuck Square in Providence, the **Moshassuck River** is classified as a working river. Its quality is impaired due to combined sewer overflows as it travels from Pawtucket and through Providence. From the Sayles Finishing Plant to the incinerator on Grotto Avenue, the canal is intact and the river corridor is suitable for development as a greenway. From the incinerator to I- 95, the river has greenway value. As it merges with the West River, it retains its relatively urban character and provides habitat areas. ***(Working)***

7.The **West River** from its headwaters in Lincoln through Smithfield to the Wenscott Reservoir has recreational value and is designated as a recreational open space river. ***(Recreational Open Space)***

8.The **Wenscott Reservoir** is suitable for swimming and, although in a relatively urban area, provides habitat. ***(Recreational Open Space)***

9.From the Wenscott Reservoir to its confluence with the Moshassuck River, the **West River** is designated as a recreational multiple use river. ***(Recreational Multiple Use)***

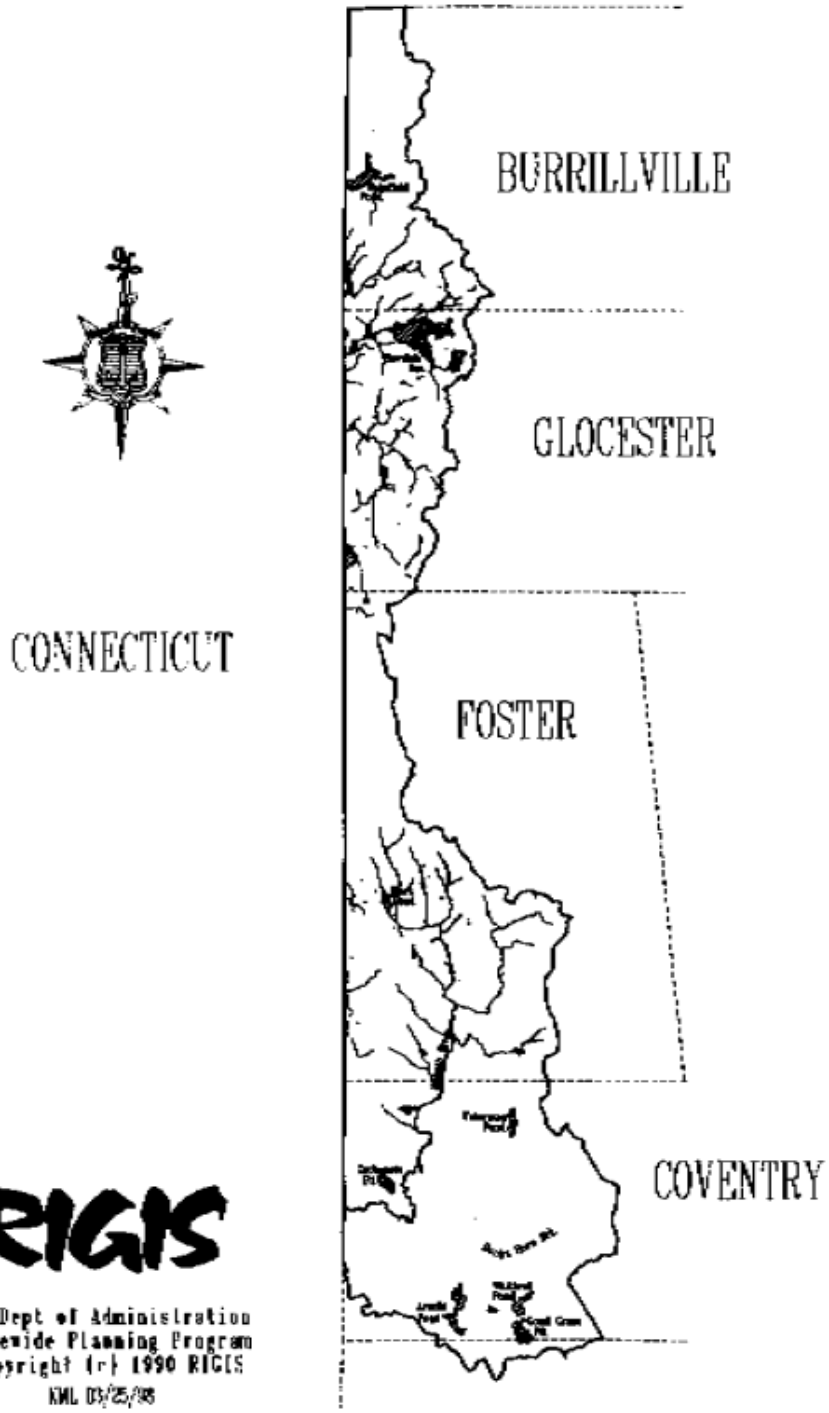
03-03-04 Thames River Watershed

The Thames River drains into Long Island Sound at Groton-New London, Connecticut. The Rhode Island portion of the watershed is located in the upland, northwestern area of the state and comprises the Five Mile River watershed in Burrillville and Glocester and, to the south, the Moosup River watershed in Glocester, Foster, and Coventry (see Figure 162-03(04)). Within Rhode Island, the Five Mile River watershed is primarily composed of ponds and reservoirs with their associated streams, and is a significant recreational resource. The Moosup River watershed is situated in a sparsely populated, wooded area and has few impoundments. Water quality meets pristine classification goals.

The watershed contains substantial amounts of land in public and private conservation holdings. Public holdings include the state's George Washington Management Area, Durfee Hill, Killingly, and Nicholas Farm Wildlife Management Areas.

FIGURE 162-03(04)

THAMES RIVER WATERSHED



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Segment Classifications in the Thames River Watershed

A. Five Mile River Watershed

1.**Wakefield Pond**, located in Burrillville, is suitable for swimming and fishing and has high habitat values associated with the eastern edge of the pond. ***(Recreational Open Space)***

2.**Lake Washington** is located in Glocester south of route US-44 in the vicinity of the George Washington Management Area. Although suitable for swimming and fishing, the water quality of the lake is threatened by septic systems. ***(Recreational Open Space)***

3.**Bowdish Reservoir** in Glocester has high habitat values and is suitable for swimming, boating, and fishing. A significant portion of the Reservoir is surrounded by the George Washington Management Area and the 226-acre Bowdish Lake Camp. The Reservoir also provides critical habitat areas that include a floating bog. ***(Recreational Open Space)***

4.**Mowry Meadow Brook** in the Durfee Hill Management Area is pristine and unimpounded. The lands owned by the Factory Mutual Insurance Company provide open space and habitat area along the Brook. ***(Pristine)***

5.**Killingly Pond** is designated suitable for swimming and fishing. Located adjacent to the Killingly Wildlife Management Area, it provides seasonal recreational opportunities although it is relatively inaccessible. ***(Recreational Open Space)***

B. Moosup River Watershed

6.The **Moosup River,** from its headwaters in the Towns of Foster and Coventry to the Rhode Island-Connecticut state line, is classified as a pristine river with wild and natural flows. Valuable for its wilderness character, it provides wildlife habitat area and a valued resource for fishing. ***(Pristine)***

7.**Carbuncle Pond** is located in the Nicholas Farm Wildlife Management Area and is designated as swimmable and suitable for fishing. The area is noted for its high habitat values. ***(Recreational Open Space)***

8.**Roaring Brook** in Coventry from the Moosup River to Arnold, Little Grass, Great Grass, and Whitford Ponds is designated as pristine and has habitat resource values. ***(Pristine)***

9.The tributary streams to the Moosup River, including **Croft Farm Brook, Keach Brook, and Mowry Brook,** are classified pristine, wild/natural. ***(Pristine)***

03-03-05 Pawtuxet River Watershed

The Pawtuxet River watershed is located in central-western Rhode Island. The river flows generally from west to east. Its headwaters are in the hills of rural western Rhode Island; its mouth is in historic Pawtuxet Village, between the cities of Warwick and Cranston, the state's second and third largest cities. The watershed encompasses all or portions of the following communities: Coventry, Cranston, East Greenwich, Exeter, Foster, Glocester, Johnston, Scituate, Warwick, West Greenwich, and West Warwick (see Figure 162-03(05)).

The Pawtuxet River watershed comprises the Scituate Reservoir and its tributaries, the North Branch of the Pawtuxet, the Pocasset River, the Big River and its tributaries, the Flat River Reservoir and its tributaries, the South Branch of the Pawtuxet, and the main stem of the Pawtuxet. In total, the watershed contains 64 ponds, 93 brooks, 7 tributary rivers, and 18 dams.

The watershed is heavily influenced by the development patterns of the 19th and 20th centuries. With the second largest volume of water in Rhode Island and a substantial drop in elevation from its headwaters to Narragansett Bay, the Pawtuxet River watershed became a center of textile manufacturing plants. Numerous impoundments were created along the river and its tributaries, and along the banks were a series of mills and mill villages, many of which now have historical significance. In the late 19th century, this development was so intensive that an urban area emerged in the eastern Coventry-West Warwick area. Factories and villages both discharged their effluent and waste into the river, degrading water quality in the lower portions of the watershed.

As the City of Providence's population increased through the industrial era, public health became a major concern. It was decided that the northern and western portions of the Pawtuxet River watershed should be used as the source for the City's drinking water. The Scituate Reservoir water system of the Providence Water Supply Board, completed in the 1920's, now provides drinking water to nearly two-thirds of the state's population. The Big River, a major tributary of the South Branch of the Pawtuxet, was recognized as another potential drinking water resource for the state, and land to construct a large surface water reservoir was acquired. The development of this project was dropped largely because of the loss of wetlands that would have resulted; the Big River Wildlife Management Area, however, remains available as a potential source of public water supply. The Quidnick Reservoir Association controls the Flat River Reservoir system, as well as flows into the South Branch of the Pawtuxet River. The Pawtuxet River is also the receiving body for several wastewater treatment plant discharges. During the 1970s and 1980s, the treatment plants of Cranston, Warwick, and West Warwick were upgraded to secondary treatment facilities, and most previous difficulties with their operation have been overcome. Notwithstanding these improvements, water quality on the main stem of the Pawtuxet is problematic, and an agreement was reached by the communities and the state to provide advanced

Figure 162-03(05)

wastewater treatment. The cost of these improvements is high, possibly in the vicinity of $100 million. In the past, industrial discharges were a major cause of water pollution; however, these sources have largely been eliminated through the decline of industry, the imposition of wastewater regulations, and connection to wastewater treatment facilities.

Through the second half of the 20th century, awareness has increased relative to water pollution from nonpoint sources. Threats occur especially from septic systems, runoff, road salt applications, and construction/development activities. The areas immediately south and west of Providence have been the direct path for post-World War II suburbanization. Interstate highways I-95 and I-295 traverse the watershed; and route RI-2, from the Pocasset River in Cranston through Warwick and West Warwick, has become a commercial center of development. The gains made in reducing point source pollution can be lost to nonpoint sources.

There is a high level of interest and potential for increasing recreational opportunities associated with the riverway. The North Branch is swimmable between the Gainer Dam of the Scituate Reservoir and the village of Hope, but development in the area threatens water quality. The Flat River Reservoir system (which includes the Flat River Reservoir/Johnson's Pond, Quidnick Reservoir, and Stump Pond) is currently used for swimming, boating, and fishing. In 1987, the Pawtuxet River Authority (created to develop recreational opportunities on the North and South Branch and the main stem of the river) drafted a plan for "a series of riverwalks, canoe access sites, and significant natural areas along the Pawtuxet River." Progress toward full implementation of this plan has been incremental, impeded by a lack of funds.

The purposes of the classifications for the Pawtuxet River are, first, to protect current values and uses within the watershed, especially in the Big River, Scituate, and Flat River Reservoirs and the North Branch to Hope areas; and second, to foster the goal of making the River a major recreational resource in the intensively suburbanized central portion of the state.

Segment Classifications in the Pawtuxet River Watershed

1.The **Scituate Reservoir** and its tributaries are located in Foster, Scituate and Glocester. Although these waters are classified as a water supply source, they are also rich in biodiversity of amphibian, plant, and bird life. ***(Water Supply)***

2.The **North Branch of the Pawtuxet River** and its tributaries from Gainer Dam at the Scituate Reservoir to RI 116 in the village of Hope are suitable for recreational swimming and fishing. Development in this area could impact water quality. ***(Recreational Open Space)***

3.The **North Branch of the Pawtuxet River** from the village of Hope to its confluence with the South Branch is located in Scituate, Coventry, and West Warwick. This segment has been impacted by failing septic systems, and improvement needs to be maintained.

Its resource values consist of open space, several historical mills and villages, two river walks, and industrial uses. At its confluence with the South Branch, at River Point, is a former municipal landfill that is being used for ballfields and a riverwalk. ***(Recreational Open Space)***

4.The **Flat River Reservoir** system, upstream of the Flat River Reservoir Dam, is designated suitable for swimming and fishing. ***(Recreational Open Space)***

5.The **South Branch of the Pawtuxet River** from the Flat River Reservoir Dam to the Quidnick Dye Mill Dam is suitable for contact recreational activities. This stretch also provides the best canoeing on the South Branch. ***(Recreational Open Space)***

6.The **South Branch of the Pawtuxet River** from the Quidnick Dye Mill Dam to its confluence with the North Branch is classified non-contact recreational due to the permitted discharge from Hoechst Celanese and the hydropower facility in Arctic. There are several historic industrial buildings along this stretch of the river. ***(Recreational Multiple Use)***

7.Although heavily developed, **Tiogue Lake**, located in Coventry, is suitable for swimming and boating. In addition to Briar Point Beach, it is considered good habitat for birds. ***(Recreational Open Space)***

8.The **Big River** is classified as pristine with water supply value. In addition to its high quality waters , the Big River area contains open space, extremely high habitat values, and important wetlands. Its groundwater is a potential source of public water supply; i.e., wells for Kent County Water. ***(Pristine)***

9.The main stem of the **Pawtuxet River**, from its confluence with the North and South Branches to its mouth in Pawtuxet Cove, is designated for boating and other non-contact recreational activities and has habitat value. It is canoeable to the Natick Dam and also from Pontiac village to Pawtuxet village. Permitted discharges from three wastewater treatment facilities impact the water quality of this segment. From Elmwood Avenue to Pawtuxet village the river corridor provides an opportunity for a greenway. Mitigation of runoff from highways is a major issue. ***(Recreational Multiple Use)***

10.The resource value of **Meshanticut Brook** is its waterfalls. From its headwaters to its confluence with the Pawtuxet River, the Brook is designated as a recreational open space river. ***(Recreational Open Space)***

11.The **Pocasset River** is classified as a recreational open space river. Resource values consist of the falls area above Memorial Park, Snake Den State Park, high habitat value at its headwaters, and farms in Johnston. Cranston Print Works , an historic mill, as well as a mill village, are located downstream. The River, while currently having poor water quality and flowing through urban areas, is a potential amenity. ***(Recreational Open Space)***

12.**Mashapaug Pond, Spectacle Pond, and Roger Williams Park Ponds** are suitable for boating and other non-contact recreational activities. They are non-flushing waterbodies that receive nonpoint source pollutants and nutrients from parking lots and surface runoff. ***(Recreational Multiple Use)***

03-03-06 Greenwich Bay Watershed

Greenwich Bay is an embayment within Narragansett Bay whose shorelines are bounded by Warwick and East Greenwich. The freshwater watershed comprises portions of three communities: East Greenwich, Warwick, and West Warwick (see Figure 162-03(06)). Two streams, Hardig Brook and the Maskerchugg River, flow through the watershed and deposit fresh water to Greenwich Bay. Hardig Brook drains the area west of Apponaug. The Maskerchugg River is a small stream that drains southern Warwick, east of route RI-2, and the downtown portion of East Greenwich. Both Hardig Brook and the Maskerchugg are in old villages surrounded by suburban development.

Greenwich Bay has experienced increased pollution levels that caused its closure to shellfishing in 1992. The City of Warwick, in cooperation with the state, prepared a *Strategic Plan for the Reclamation of Greenwich Bay* (February 1994); reduction of nonpoint pollution sources are a major element of this plan.

Hardig Brook is noted for its open space value; two ponds are used recreationally. The Maskerchugg has "back-yard" open space value and feeds Bleachery Pond. Both rivers supported modest levels of mill development into the 20th century.

Segment Classifications in the Greenwich Bay Watershed

1.**Hardig Brook** from its headwaters in West Warwick to Toll Gate Road in Warwick, except for the YMCA Pond, is designated as recreational with open space value. A portion of the Brook flows through property owned by the YMCA. ***(Recreational Open Space)***
2.The **YMCA Pond** is recreational open space, suitable for swimming and other contact recreational activities. ***(Recreational Open Space)***

3.**Hardig Brook** and associated small ponds, from Toll Gate Road to Gorton Pond, are considered suitable for boating and other non-contact recreational activities, and have a resource value as urban open space, with the provision that water quality objectives are to be consistent with the Greenwich Bay Reclamation Plan. ***(Recreational Multiple Use)***

Figure 162-03(06)

4.**Gorton Pond** is located in Warwick and is designated for swimming and other contact recreational activities. ***(Recreational Open Space)***

5.Although the **Maskerchugg River** from its headwaters to Bleachery Pond is considered recreational, flow may not be sufficient for canoeing; the River does, however, function as an open space corridor. ***(Recreational Open Space)***

6.**Bleachery Pond** is designated for multiple use, is suitable for non-contact recreational activities such as boating, and has value as urban open space. ***(Recreational Multiple Use)***

7.The **Maskerchugg River** from Bleachery Pond to Greenwich Bay is designated as a multiple use river suitable for boating and other non-contact recreational activities with urban open space value. ***(Recreational Multiple Use)***

03-03-07 Hunt-Potowomut Watershed

The Hunt-Potowomut watershed is located in East Greenwich, northern North Kingstown, the Potowomut section of Warwick, and small sections of Coventry, Exeter, West Greenwich, and West Warwick (see Figure 162-03(07)). The Hunt River forms the town line between North Kingstown and East Greenwich. The Potowomut River separates North Kingstown and Warwick. With the exception of Sand Hill Brook in North Kingstown, the tributaries of the Hunt River flow from rocky, wooded uplands, west of route RI-2. These tributaries include Scrabbletown Brook, Frenchtown Brook, Mawney Brook, and Fry Brook mostly flowing through East Greenwich. Small dams and impoundments are numerous throughout the watershed, with some dating from the colonial era. The largest impoundment is Potowomut Pond, which provides good quality habitat in the western portion.

Suburban land uses have altered this rural watershed since the second half of the 20th century. Although there are still significant conservation land holdings in the Frenchtown-Davisville area, major roadways including US-1, RI-2, and RI-4 cross the watershed. The groundwater is a sole source aquifer with a wellfield that is a public drinking water supply for the Town of North Kingstown. A specified area around the wellheads is designated by the DEM as a wellhead protection area.

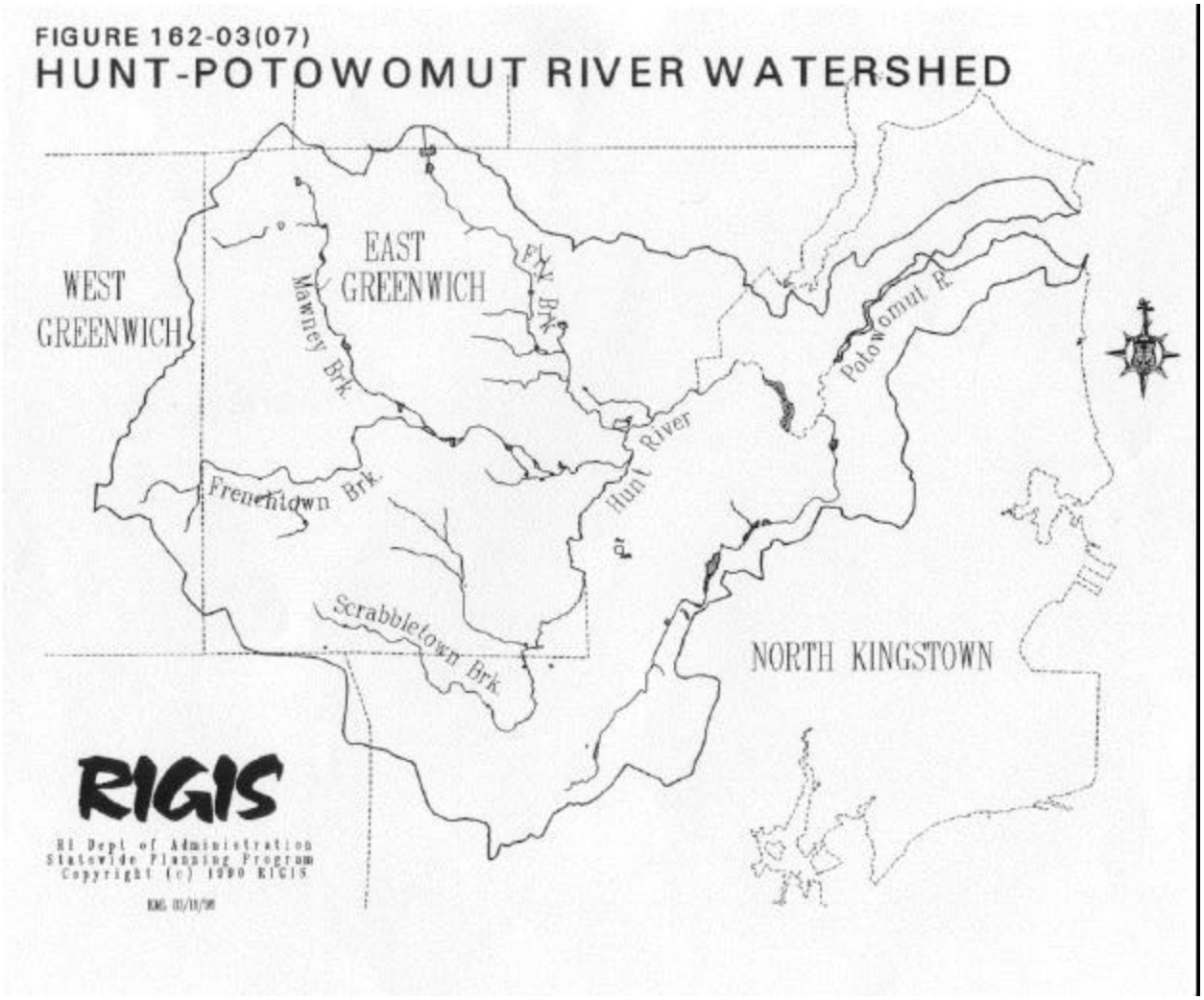
Segment Classifications in the Hunt River Watershed

1.**Sandhill Brook,** from its headwaters to its mouth, is a recreational multiple use river located in a heavily suburbanized area. ***(Recreational Multiple Use)***

2.The **Hunt River**, from its headwaters to route US-1, is designated recreational multiple use and part of a public water supply system. ***(Recreational Multiple Use)***

FIGURE 162-03(07)

HUNT-POTOWOMUT RIVER WATERSHED



3.The **Hunt River** from route US-1 to Potowomut Pond is designated as a recreational multiple use river with flows that may not be sufficient for canoeing. The river flows through a large marsh in a suburban area. This segment is also the receiving water for an industrial discharge. ***(Recreational Multiple Use)***

4.Small and fast flowing **Fry Brook,** with its tributaries, is a recreational river that provides open space and is part of an agricultural landscape. ***(Recreational Open Space)***

5.**Mawney Brook,** with its tributaries, is noted as a high quality water resource valuable for recreational fishing, as well as high habitat value. ***(Recreational Open Space)***

6.**Frenchtown Brook,** with its tributaries, is a recreational open space river that accommodates fish ladders and has high habitat value. ***(Recreational Open Space)***

7.**Scrabbletown Brook**, from its headwaters to its mouth, flows through East Greenwich and North Kingstown. In addition to high habitat value, the Brook is suitable for fishing; canoe landings are located along the stream. Potts Bog is part of the open space conservation area of the Audubon Society immediately east of RI-4; there is a canoe launching area and trail off Davisville Road. ***(Recreational Open Space)***

03-03-08 Annaquatucket River Watershed

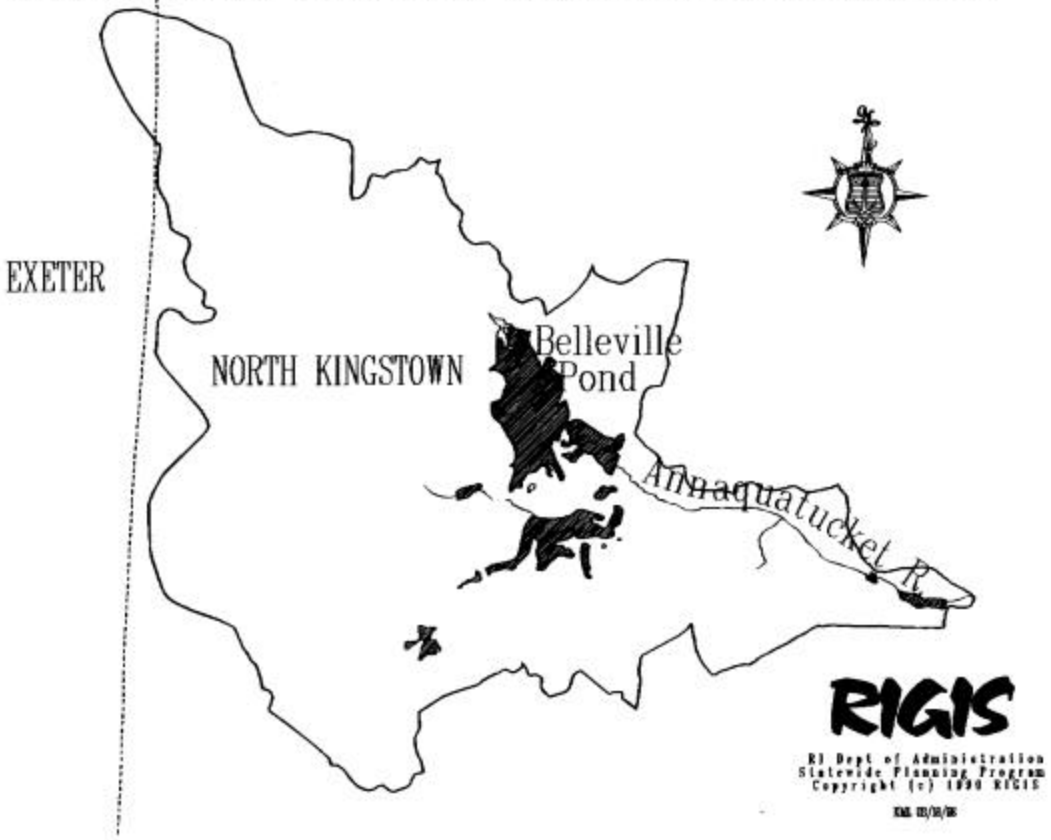
The Annaquatucket River watershed is located in central North Kingstown, south and west of the village of Wickford (see Figure 162-03(08). The river flows west to east and empties into Narragansett Bay at Bissel Cove in the village of Hamilton.

There are four impoundments in the western portion of the watershed, two of which (Upper and Lower Belleville Ponds) were associated with a textile mill complex that is no longer standing. Upper Belleville Pond, especially in its northern and western portions, has high habitat value; the watershed also contains public drinking water supply wells for the Town of North Kingstown. South and east of Belleville Pond are a closed landfill and an automobile salvage yard. Around Upper Belleville Pond, a substantial portion of the land is publicly owned; both ponds are used recreationally.

From the Belleville Ponds to Bissel Cove, the Annaquatucket is a slow-moving stream flowing through relatively flat terrain and wetlands in an area that is substantially suburbanized. A second closed municipal landfill is in the watershed. Just west of Hamilton there is another mill pond. Archaeological and historically significant sites are found in this portion of the watershed. Fish ladders have been constructed on the Annaquatucket to support anadromous fish migration.

FIGURE 162-03(08)

ANNAQUATUCKET RIVER WATERSHED



Segment Classifications in the Annaquatucket River Watershed

1.The headwaters of the **Annaquatucket River** are located west of route RI-4 in North Kingstown. The waters supported the colonial mill site of Lafayette. A marshy area supports wildlife habitat, and watercress is grown in the stream. The river, upstream of Belleville Pond, is designated as recreational open space with high habitat value. It is also the location of a state trout hatchery. ***(Recreational Open Space)***

2.**Upper Belleville Pond**, with associated wetlands, is a pristine area with important high quality habitat areas. The pristine classification is intended to protect public drinking water supply wells. The Pond functions as a pristine waterbody but experiences severe problems due to low dissolved oxygen, high nutrient inputs, and algal blooms. ***(Pristine)***

3.**Kettle Hole Pond, Lower Belleville Pond, and Secret Lake** are suitable for swimming and boating. There is a large wetland complex upstream of Secret Lake on the west side of RI-4. Kettle Hole is the site of a town well and grist mill. There is also a junk yard and former landfill in the vicinity of Secret Lake. Lower Belleville Pond is a highly nutrient-enriched pond from runoff. ***(Recreational Open Space)***

4.Due to low flow conditions, the **Annaquatucket River** from Belleville Pond to Bissel Cove is not suitable for swimming or other contact recreational activities. Flow may not be sufficient for canoeing. Valued for its open space, it includes archaeologically significant areas and has an anadromous fish run. There are fish ladders at Featherbed Lane and at Mill Pond along RI-1A, as well as at Secret Lake and Belleville Pond. ***(Recreational Open Space)***

03-03-09 Mattatuxet and Pettaquamscutt Rivers-Narrow River Watershed

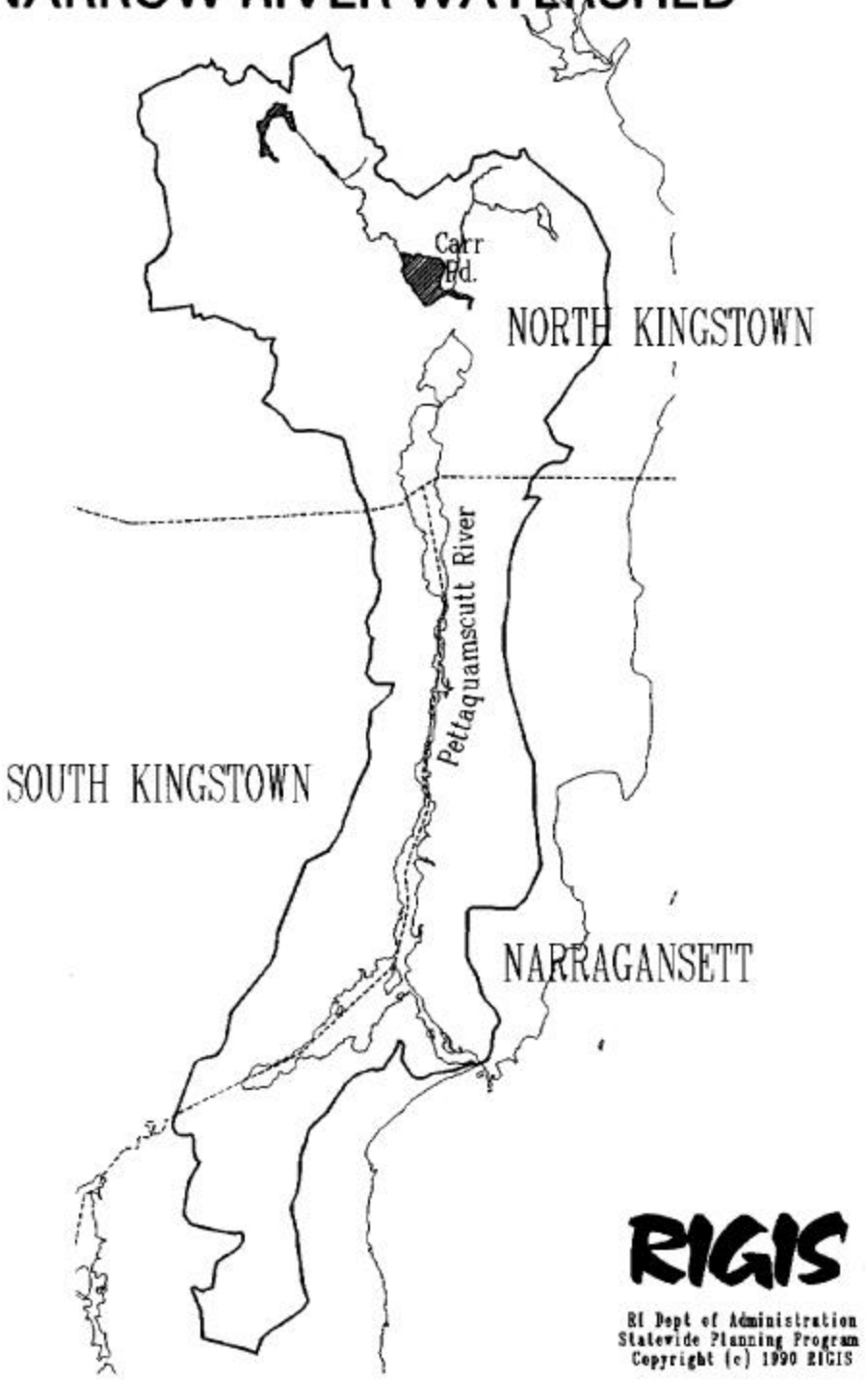
The Pettaquamscutt, or Narrow River, watershed is located in the towns of North Kingstown, South Kingstown, and Narragansett (see Figure 162-03(09)). The fresh water portion of the watershed, known as the Mattatuxet River, and its associated ponds are found in North Kingstown.

Silver Spring Lake, which is situated west of Colonel Rodman Highway, routes US-1 and RI-4, is a handicapped-accessible public fishing area with a scenic waterfall. From Silver Spring Lake, the Mattatuxet passes under US-1 past the hamlet of Shady Lea, and into Carr Pond. This area is largely undeveloped, and habitat values are high.

From Carr Pond, the Mattatuxet flows to Gilbert Stuart's birthplace, a colonial mill and National Historical Landmark; over a dam; through a raceway; and into the Pettaquamscutt River. There are anadromous fish runs on the river.

FIGURE 162-03(09)

NARROW RIVER WATERSHED



Segment Classifications in the Mattatuxet and Pettaquamscutt Rivers-Narrow River Watershed

1.**Silver Spring Lake,** with its tributaries, is notable for recreational use, primarily fishing. DEM stocks the lake with trout, which makes it a very popular spot on opening fishing day. Limited boating is possible; water quality is, however, threatened due to road runoff and development. ***(Recreational Open Space)***

2.The **Mattatuxet River** from Silver Spring Lake to its mouth at Carr Pond has pristine water quality and is noted for its wildlife habitat and natural areas. ***(Pristine)***

3.**Shady Lea Pond** is located in a historic textile village and is suitable for recreation. ***(Recreational Open Space)***

4.**Carr Pond** is designated as pristine and supports three of North Kingstown's public drinking water wells. There is also a Girl Scout camp on the south and west sides of the pond. ***(Pristine)***

5.**Gilbert Stuart Stream**, from Carr Pond to the dam at the Gilbert Stuart Birthplace, has a fish ladder and is valued as a high quality habitat resource; it is, however, known to have high bacterial counts. ***(Recreational Open Space)***

03-03-10 Saugatucket River Watershed

The Saugatucket River watershed is located in the eastern half of South Kingstown, in the valley between Tower Hill and Kingston Hill. Its headwaters are in the very southern portion of North Kingstown, an area known as Shermantown (see Figure 162-03(10)). From there, the river flows south through the village of Peace Dale and into Wakefield, where it goes over a falls, becomes tidal, and empties into Point Judith Pond.

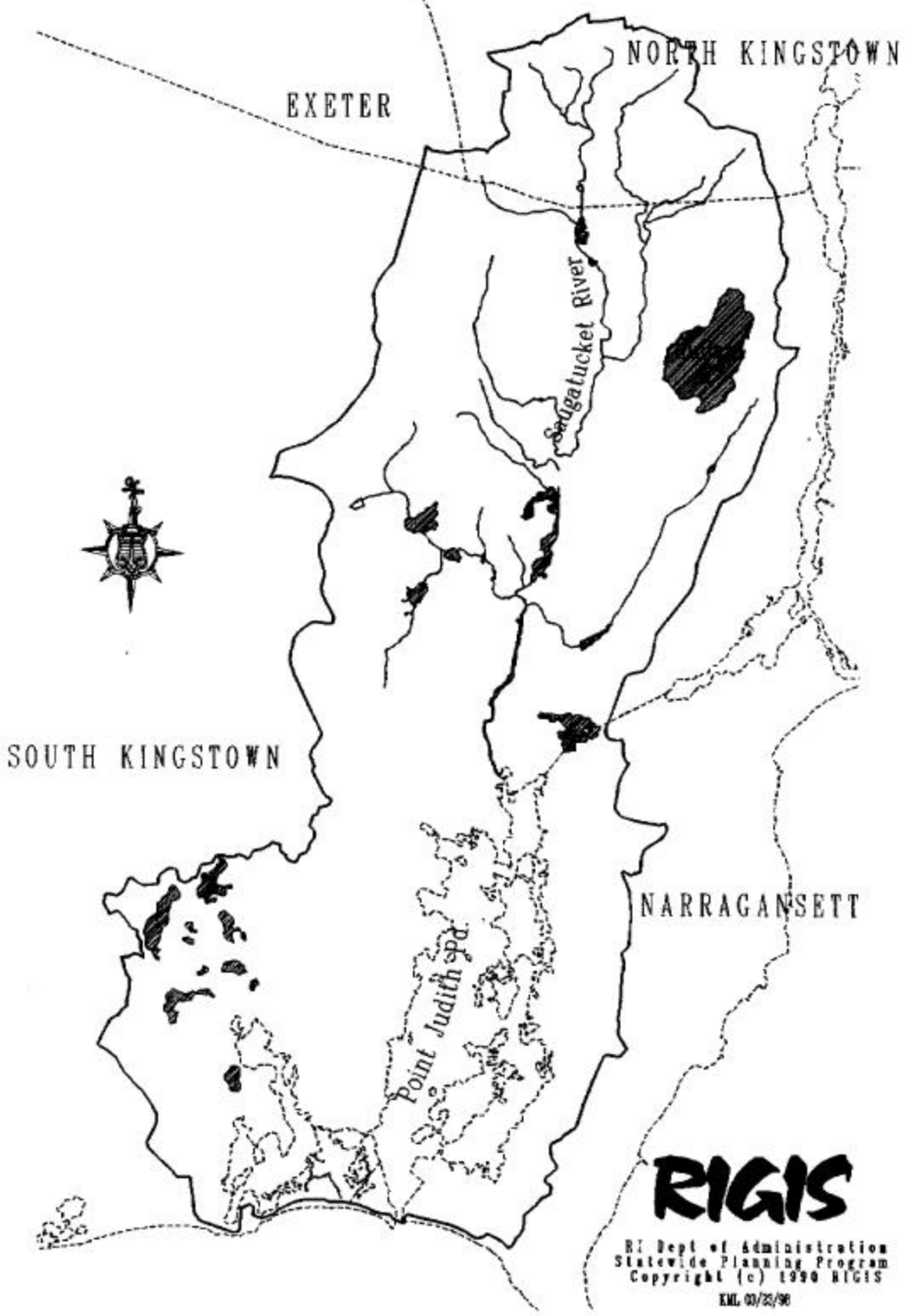
The watershed north of Peace Dale was once predominantly agricultural. Little active agriculture remains, although there are some relatively large parcels of open land. Also found here are sand and gravel operations and a closed municipal landfill called Rose Hill Landfill, a Superfund site. The environs support areas of outstanding habitat in the northern portion. Indian Lake, the largest impoundment in the watershed, is swimmable and fishable.

Peace Dale is an historic mill village, the seat of the Hazard family's enterprise. The Hazards lived in the village and were generous to it; their benefactions included areas along the river. The Saugatucket River broadens for a mile above the dam in Peace Dale. The open space quality is high, and the river is canoeable.

From Peace Dale through Wakefield, the Saugatucket is part of a densely developed town. Behind the dam at Main Street, it again broadens and has recreational potential.

FIGURE 162-03(10)

SAUGATUCKET RIVER WATERSHED



This potential, along with that of the tidal portion, is being actively explored by the Saugatucket River Heritage Corridor Coalition.

Fresh Meadow Brook is the Saugatucket's primary tributary stream.

Segment Classifications in the Saugatucket River Watershed

1.The **Saugatucket River** from its headwaters in North Kingstown to Mitchell Brook is classified pristine with high habitat values. ***(Pristine)***

2.The **Saugatucket River** from Mitchell Brook to Saugatucket Road is designated for recreational open space. Flow may not, however, be sufficient for canoeing. There is still a possibility of contamination from the landfill. ***(Recreational Open Space)***

3.The **Saugatucket River** from Saugatucket Road to Peace Dale, including Saugatucket Pond, is designated as suitable for canoeing and other non-contact recreational activities (noting that there are open spaces and landscapes associated with historic Peace Dale village). The pond and adjacent land have scenic values. There are also hiking trails along this segment. ***(Recreational Open Space)***

4.The Tri-Pond Park System, which is comprised of **Asa Pond, Rocky Brook Reservoir, and Peace Dale Reservoir,** is designated as recreational open space suitable for canoeing and other non-contact recreational activities. There is an extensive trail system in the pond area. ***(Recreational Open Space)***

5.**Rocky Brook**, to Kersey Road in Peace Dale, is designated recreational open space. ***(Recreational Open Space)***

6.**Rocky Brook**, from Kersey Road to its confluence with the Saugatucket River, is a recreational multiple use river in historic mill villages. ***(Recreational Multiple Use)***

7.**Indian Lake** is a recreational waterbody, suitable for swimming and fishing. ***(Recreational Open Space)***

8.**Indian Run Brook**, from Indian Lake Shores to Indian Run Reservoir, is utilized as recreational open space. ***(Recreational Open Space)***

9.**Indian Run Reservoir** is designated recreational open space suitable for swimming. ***(Recreational Open Space)***

10.The **Saugatucket River** from Saugatucket Pond in Peace Dale to the dam at Main Street in Wakefield is a recreational multiple use river. This segment has exceptional open space and recreation potential, although the water quality is threatened by nonpoint source pollution from runoff. ***(Recreational Multiple Use)***

03-03-11 Wood-Pawcatuck Watershed

The Wood-Pawcatuck watershed, located in the southwestern portion of the state, is Rhode Island's premier fresh water recreational resource. The watershed includes all or a portion of the following communities: Charlestown, Coventry, East Greenwich, Exeter, Hopkinton, North Kingstown, Richmond, South Kingstown, Westerly, and West Greenwich (see Figure 162-03(11).

Because river volumes and drop in elevation are modest, the Wood-Pawcatuck was not a focus for heavy industrialization in the 19th century to the extent that the Blackstone and the Pawtuxet were. Through the middle of the 20th century, most of the land remained forested or in agricultural production. Extensive public holdings and wetlands have protected river corridors from residential encroachment.

The Wood-Pawcatuck boasts of 55 miles of canoeable river. The primary objective in the management of this watershed is to preserve its quality as a prime recreational resource of the state. The Wood-Pawcatuck watershed contains major critical wildlife habitat areas. A second objective for its management, closely related to the first, is to maintain habitat quality.

Population growth in the watershed has been rapid since 1950, and the people living in the region depend on groundwater for their water supply. The Wood-Pawcatuck watershed is a sole source aquifer, and a third, critical management objective is to keep groundwater quality high so that its suitability as drinking water is preserved.

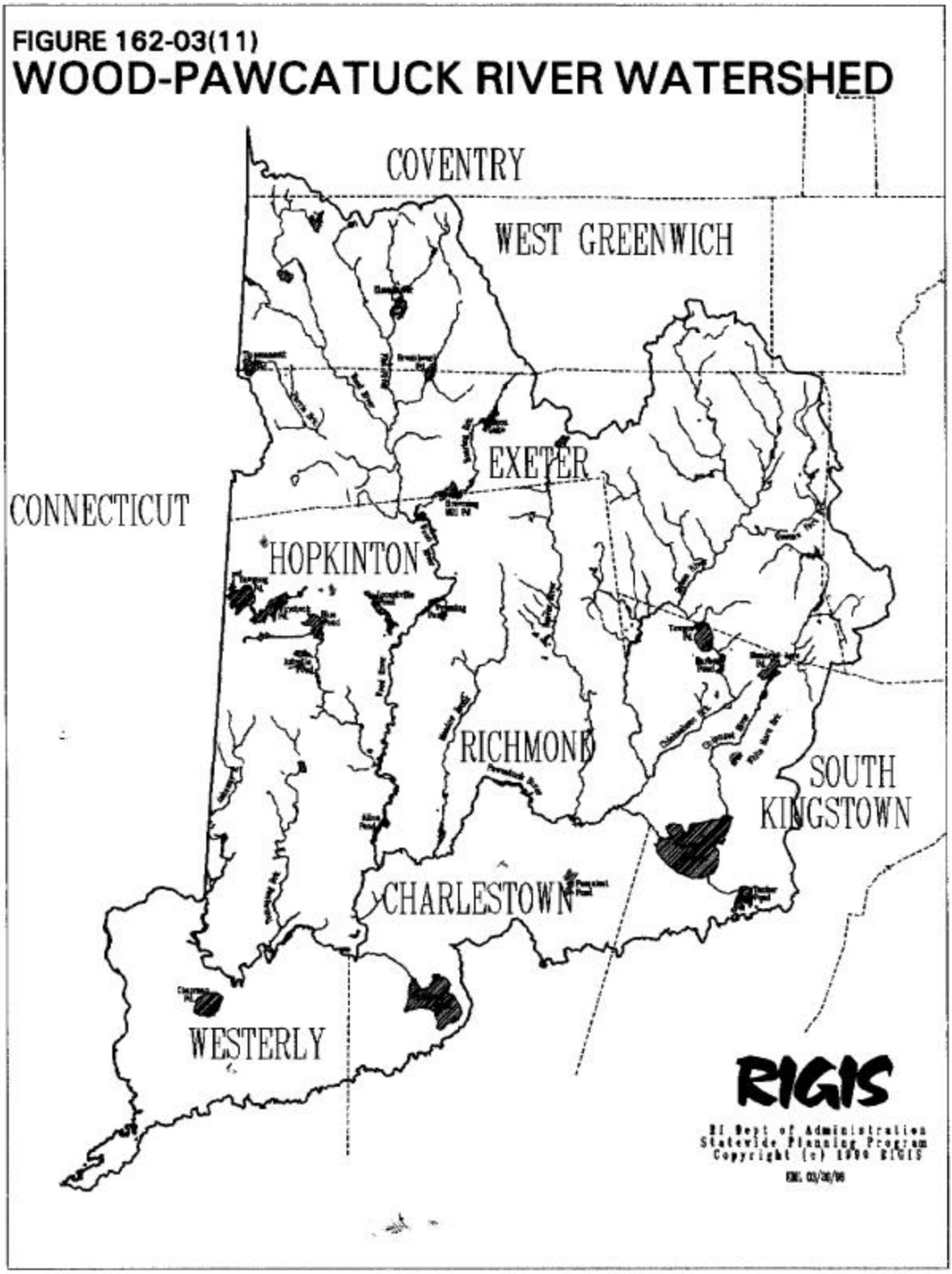
A prime threat to water quality is suburbanization. With the exception of a portion of Westerly, the watershed is not served by public sewers. Proper functioning and maintenance of septic systems is therefore a critical concern. Fortunately, the region is among the leaders in the consideration and establishment of wastewater management districts. Such efforts merit being made a priority but require local endorsement and approval.

A further objective is to preserve agriculture within the watershed. Agriculture has been declining in Rhode Island for more than a century, and little is left. The Wood-Pawcatuck watershed contains active agricultural operations supporting production of sod and turf, potatoes, berries, poultry, eggs, nurseries, and truck farming. These often require irrigation to be commercially viable. The Wood-Pawcatuck is the only watershed in Rhode Island where agricultural water withdrawals from rivers are a significant issue. It is also critical that the use of pesticides and fertilizers, as well as erosion and sedimentation, be managed in a manner that minimizes adverse effects on wildlife habitat, drinking water supply, and recreational uses of water. The Farmland Preservation Act *(Chapter 42-66, General Laws of Rhode Island)* allows the state to identify and acquire development rights in order to maintain farming, productive open space, and groundwater recharge areas.

The Act establishes an Agricultural Land

FIGURE 162-03(11)

WOOD-PAWCATUCK RIVER WATERSHED



Preservation Commission to inventory and acquire development rights of remaining farmland.

During the "energy crisis" of the 1970s, conflicting views emerged as efforts to restore mill dams for electric power were poised against the restoration of anadromous fish along the Pawcatuck River. This debate gave rise to disagreements over the effectiveness of technology for protecting fish from entrapment in water intakes; the feasibility of fish ladders to permit migrating fish to bypass dams; and the relative impacts of these two activities on historic preservation, environmental enhancement, and water-based recreation.

The watershed benefits from substantial public and private conservation efforts. The state's Arcadia, Wickaboxet, Rockville, Carolina, Great Swamp, Burlingame, and Woody Hill Wildlife Management Areas, and Burlingame State Park are within it. The Audubon Society of Rhode Island has significant holdings, as does the Narragansett Indian Tribe in addition to controlling eight hundred feet of frontage on the Pawcatuck, and the Nature Conservancy is focusing on Wood-Pawcatuck watershed land protection, particularly along the Beaver River.

Equally important in the protection of the watershed is the private non-profit citizens group, the Wood-Pawcatuck Watershed Association. The Association conducts education and monitoring programs, promotes river stewardship, and advocates development practices that preserve water quality. The Association organizes events to increase public appreciation of the value and natural beauty of the watershed; it also publishes a map for canoeists.

For the most part, water quality throughout the watershed is good to excellent. However, there are areas where it is degraded and segments where it is threatened, especially by development. Point source discharges, while not a significant issue overall in this watershed, do limit swimming uses in specific areas in the vicinity of the discharge points.

Segment Classifications in the Wood-Pawcatuck Watershed

1.**Parris Brook** from its headwaters at Tippecansett Pond to the Woody Hill Dawley Swamp is a pristine river. ***(Pristine)***

2.The **Falls River** is a pristine river with high value for recreation; it is, in fact, overused in areas. Stepping Stone Falls is a resource value. ***(Pristine)***

3.The **Flat River**, the **Wood River**, and **Breakheart Brook** from their headwaters to their confluence with Roaring Brook, are pristine natural rivers with high habitat value. Breakheart Brook flows through the Alton Jones campus of URI in West Greenwich. ***(Pristine)***

4.**Boon Lake** and its tributaries, and **Roaring Brook** to its confluence with the Wood River, are recreational. Water quality is, however, threatened by waterfowl and nonpoint source pollution. ***(Recreational Open Space)***

5.The **Wood River** from Roaring Brook to Barberville at Old Nooseneck Hill Road is a pristine river with high habitat, scenic, and natural landscape values. ***(Pristine)***

6.The **Wood River** from Barberville to RI-138 in Hope Valley is a recreational open space river suitable for swimming and fishing. ***(Recreational Open Space)***

7.The **Wood River** from RI-138 in Hope Valley to its confluence with Brushy Brook is a recreational multiple use river. The area is urbanized and experiences septic system failures, which are exacerbated by the geology. ***(Recreational Multiple Use)***

8.**Wincheck** and **Locustville Ponds,** and **Brushy Brook**, from its headwaters in Exeter to Locustville Pond are designated suitable for swimming and fishing. ***(Recreational Open Space)***

9.**Brushy Brook**, from Locustville Pond to its confluence with the Wood River, is a recreational open space river suitable for canoeing and other non-contact recreational activities. ***(Recreational Open Space)***

10.**Yawgoog Pond** is suitable for swimming and other contact recreational activities. It is also a public drinking water supply for Camp Yawgoog. ***(Water Supply)***

11.The **Wood River** from its confluence with Brushy Brook to its confluence with the Pawcatuck River, is suitable for fishing and swimming. ***(Recreational Open Space)***

12.**Long, Ell,** and **Blue Ponds**, as well as their headwaters, are pristine waterbodies with high habitat value. The quality is threatened by acid rain. ***(Pristine)***

13.**Ashville Pond** is suitable for swimming and fishing. ***((Recreational Open Space)***

14.**Canonchet Brook**, from its headwaters in Hopkinton to its confluence with the Wood River, is designated for recreation. ***(Recreational Open Space)***

15.**Tucker Pond** and **Alewife Brook**, from their headwaters to Worden Pond, are suitable for swimming and fishing, and have high habitat value. ***(Recreational Open Space)***

16.**Worden's Pond** is noted as a recreational water body designated for swimming and fishing. It has high habitat value and is associated with its proximity to the Great Swamp; it is host to a variety of migratory birds and osprey. It is, however, threatened by shoreline development. ***(Recreational Open Space)***

17.The **Usquepaug River** from Glen Rock Reservoir to its confluence with Chickasheen Brook in the the Great Swamp, is designated a recreational open space river. Due to its location in an area of prime agricultural land, withdrawals are substantial. ***(Recreational Open Space)***

18.**Locke, Fisherville** and **Queens Fort Brooks**, as well as the **Queens River** are pristine with high habitat resource values. The Queens River Eppley is an important Audubon Society refuge. There is a permitted wastewater discharge from the Ladd School on the Queens River. The southern portion of the River is impacted by water withdrawals for agricultural use. ***(Pristine)***

19.The **Chipuxet River**, from its headwaters in Exeter and North Kingstown to Taylor's Landing at RI-138, is recreational open space. It provides wildlife habitat and is also a wellhead protection area. ***(Recreational Open Space)***

20.**Hundred Acre Pond** and **Thirty Acre Pond** are designated for swimming and fishing. **(Recreational Open Space)**

21.**Yawgoo** and **Barber Ponds** are both suitable for swimming and other contact recreational activities. ***(Recreational Open Space)***

22.The **Chipuxet River** from Taylor's Landing to Worden's Pond is a pristine river with habitat values and is used for canoeing. ***(Pristine)***

23.The **Pawcatuck River** from Worden's Pond to its confluence with the Usquepaug River is pristine, a natural river with high habitat values. ***(Pristine)***

24.From their headwaters to their mouths, **Meadow Brook,** the **Beaver River**, and **Chickasheen Brook** are designated as recreational open space rivers. In addition to providing habitat, these are areas of significant water withdrawals for agriculture, and water volumes may fluctuate. ***(Recreational Open Space)***

25.The **Pawcatuck River**, from the Usquepaug River to the Kenyon Piece Dyeworks wastewater outfall, is suitable for swimming and fishing. From that point to Horseshoe Dam in Shannock, the river is suitable for canoeing and other non-contact recreational activities. ***(Recreational Open Space)***

26.The **Pawcatuck River**, from Shannock to route RI-91 just south of the Carolina Management Area, is pristine and of exceptional habitat and natural quality. It is suitable for swimming, fishing, and canoeing. ***(Pristine)***

27.The **Pawcatuck River** from route RI-91 to Bradford is a recreational open space river suitable for swimming, fishing, and canoeing; it also has high habitat value. ***(Recreational Open Space)***

28. The **Pawcatuck River**, from Bradford to the dam (where it becomes tidal) upstream from the village of White Rock, is suitable for canoeing and other non-contact recreational activities. This is attributed to permitted industrial point source discharges and possibly leachate from the landfill adjacent to Chapman Road. Bradford Bend is a high habitat area from north to south to west. ***(Recreational Open Space)***

29.The **Ashaway River** and **Tomaquag Brook** from their headwaters to their confluence with the Pawcatuck River, are pristine, significant wildlife habitat, and natural area rivers. ***(Pristine)***

30.**Watchaug Pond** is designated recreational open space suitable for swimming and fishing. It is located in the Burlingame Wildlife Management Area and State Park and has high habitat value as well as very high recreation usage. ***(Recreational Open Space)***

31.**Poquiant Brook**, from Watchaug Pond to the Pawcatuck River, is suitable for swimming and other contact recreational activities and has high habitat value. ***(Recreational Open Space)***

32.**Chapman Pond** and **Aguntaug Brook**, to the confluence with the Pawcatuck River, are recreational open space with high habitat value. Due to an adjacent landfill, swimming and other contact recreational activities are not recommended. ***(Recreational Open Space)***

03-03-12 Ten Mile River Watershed

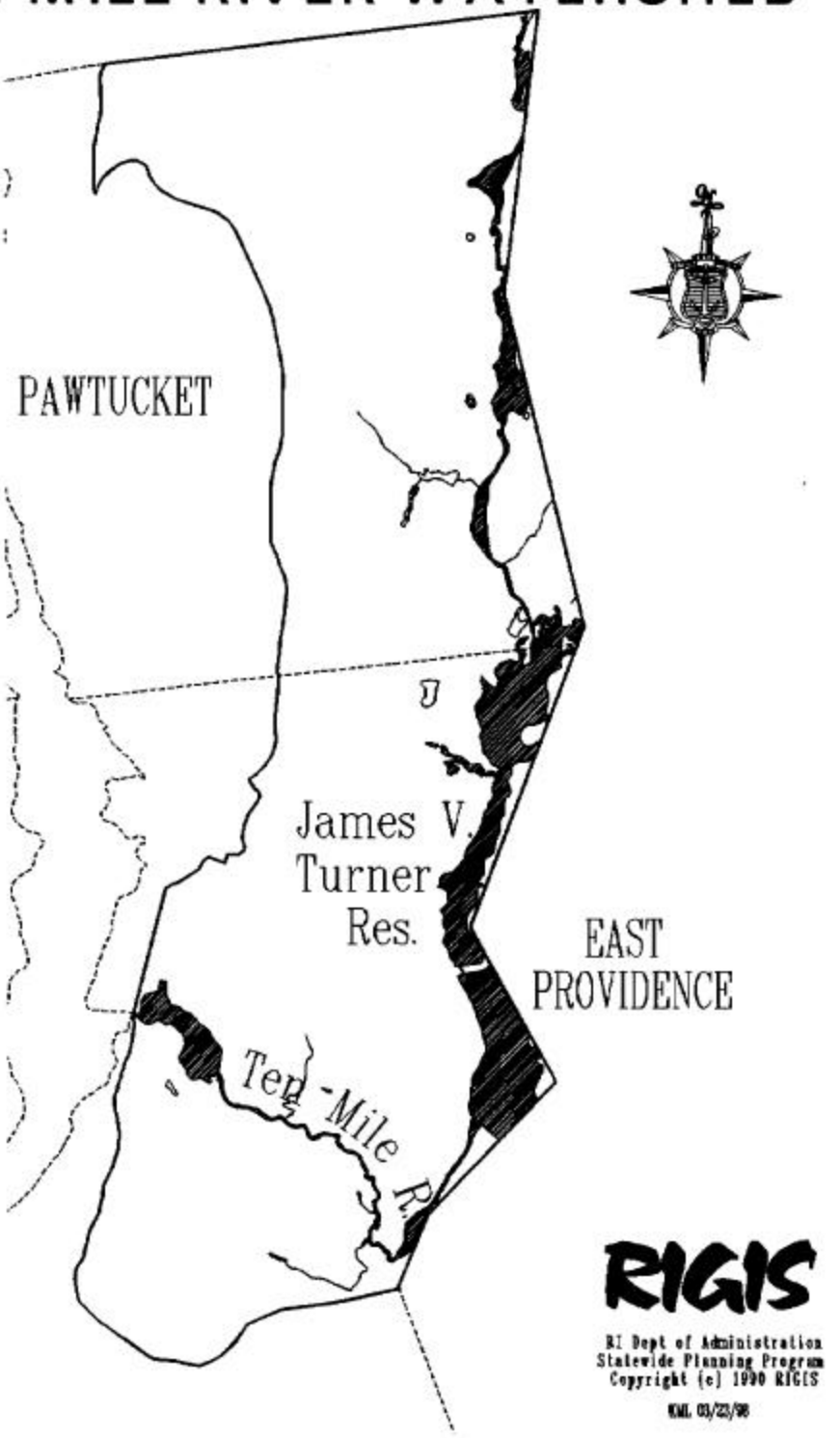
The Ten Mile River watershed forms Rhode Island's eastern boundary with Massachusetts through the cities of Pawtucket and East Providence (see Figure 162-03(12). The river principally drains an area that extends into North Attleboro and Attleboro, Massachusetts.

In Rhode Island, the river connects a series of ponds and reservoirs associated with open space and recreational areas including Slater Park, Pawtucket Country Club, and the Agawam Hunt Club. The cities of Pawtucket and East Providence have recognized the substantial recreational potential and open space value of the Ten Mile River. In 1993, a transportation funding application was jointly submitted by the cities to establish a greenway/bike path in the watershed.

Although the Ten Mile River watershed has good open space value, water quality is only fair as the river flows through relatively intensively developed older communities.

FIGURE 162-03(12)

TEN MILE RIVER WATERSHED



Segment Classifications in the Ten Mile River Watershed

1.The **Ten Mile River** from the Massachusetts state line to the dam in Slater Memorial Park is a recreational open space river. Current water quality may not be sufficiently suitable for swimming and other contact recreational activities. The character of this segment's corridor varies from residential development to parks and open space including the Ten Mile River Reservation and Slater Memorial Park. This segment is canoeable and also has high habitat value. ***(Recreational Open Space)***

2.The **Ten Mile River**, from the dam in Slater Park to Central Pond, is designated recreational open space suitable for non-contact recreational activities; river flow may not, however, be sufficient for canoeing. The river also has good open space value. ***(Recreational Open Space)***

3.**Central Pond** and **James V. Turner Reservoir** in the City of East Providence are protected waterbodies in an urban area. These waterbodies are designated recreational open space suitable for non-contact recreational activities. ***(Recreational Open Space)***

4.The **Ten Mile River** from the Turner Reservoir to Pawtucket Avenue in East Providence is recreational open space suitable for non-contact recreational activities. ***(Recreational Open Space)***

5.The **Ten Mile River**, from Pawtucket Avenue and including Omega Pond, is considered recreational multiple use, suitable for non-contact recreational activities and urban open space. In addition to providing cooling water for industrial purposes, Omega Pond is a resource for shad fishing. ***(Recreational Multiple Use)***

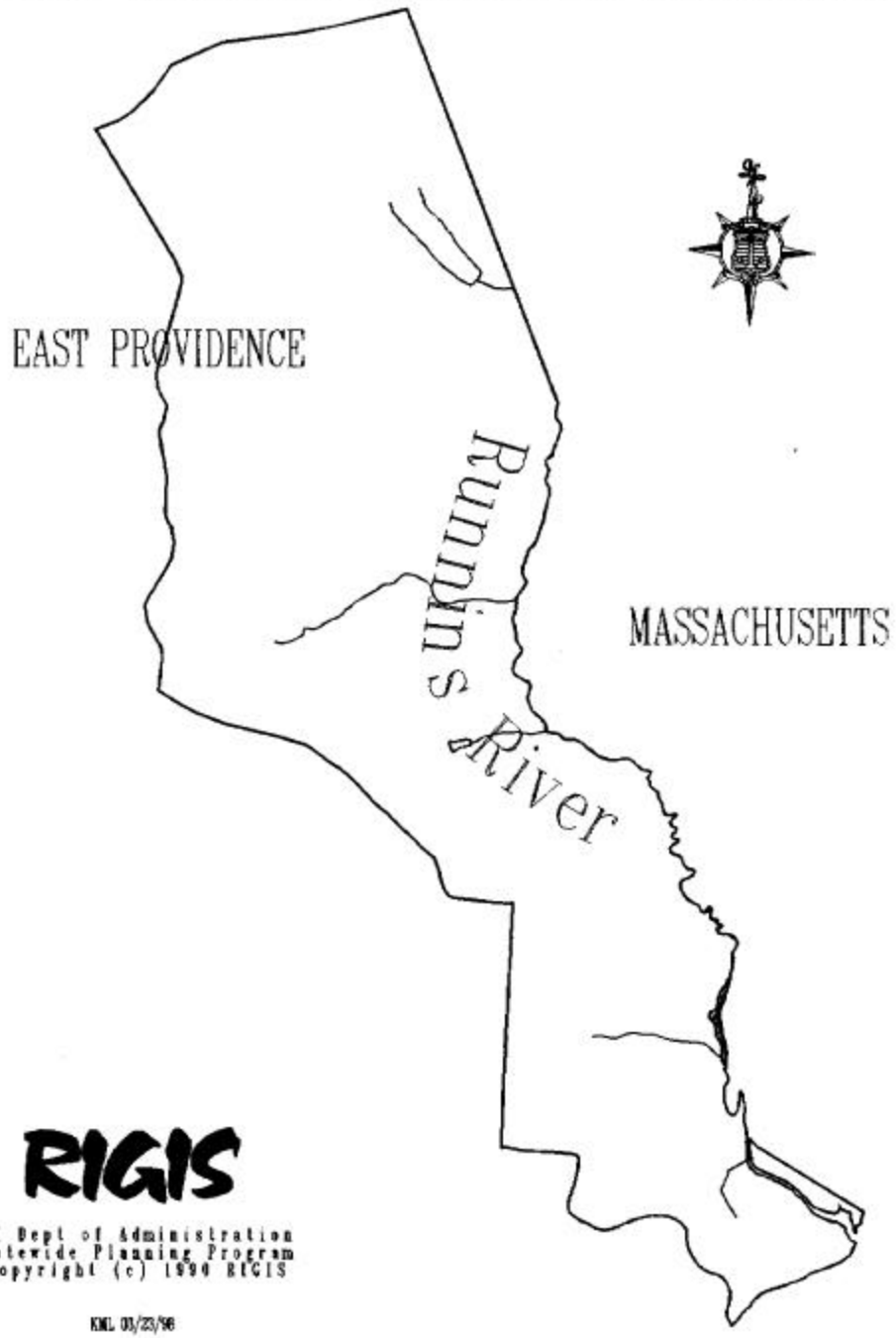
03-03-13 The Runnins River and Pokanoket Watershed

The Pokanoket Watershed is divided between Rhode Island and Massachusetts. In fact, the Runnins River, which is the main stream in the watershed, forms part of the state boundary (see Figure 162-03(13)). The Rhode Island portion of the watershed through East Providence is heavily developed, and Seekonk, Massachusetts, has undergone intensive development during the last two decades. Development patterns have a major impact on the watershed and the quality of the Runnins River. The river empties into Hundred Acre Cove in Barrington, which is rated among the largest and most productive salt marshes in Rhode Island but has been vulnerable to closure to shellfishing due to pollution.

For decades, the Runnins River was more or less out of sight and out of mind. Little attention was paid to its condition. A price was paid for this neglect. Shellfishing was banned in Hundred Acre Cove by DEM in the spring of 1993. This era of neglect,

FIGURE 162-03(13)

RUNNINS RIVER & POKANOKET WATERSHED



however, ended with the organization of the Pokanoket Watershed Alliance. Local conservation commissions, planning boards, and land trusts are also active advocates of the watershed's protection. The University of Rhode Island, Graduate Curriculum in Community Planning, conducted an award-winning study of the river. The National Park Service's River and Trails Program has provided technical assistance to bring attention to watershed values and potential. The Pokanoket Watershed Alliance has set the goal of restoring and maintaining the water quality of the Runnins River.

The stresses on the watershed are substantial. Although Barrington and East Providence are sewered communities, Rehoboth and Seekonk, Massachusetts, which are not sewered, are still being developed, resulting in increased impacts from construction and major shopping plazas. Infiltration from septic systems and runoff are continuing problems; groundwater and surface water contamination from the 800 acre Mobil Oil site in East Providence is being remediated.

Classification of the Runnins River

1.The **Runnins River**, from its headwaters to Hundred Acre Cove, is a recreational river, although flow may not be sufficient for canoeing. The river also has open space value, with recognition that the watershed comprises an ecologically significant salt marsh and estuary. ***(Recreational Open Space)***

03-03-14 Kickemuit Watershed

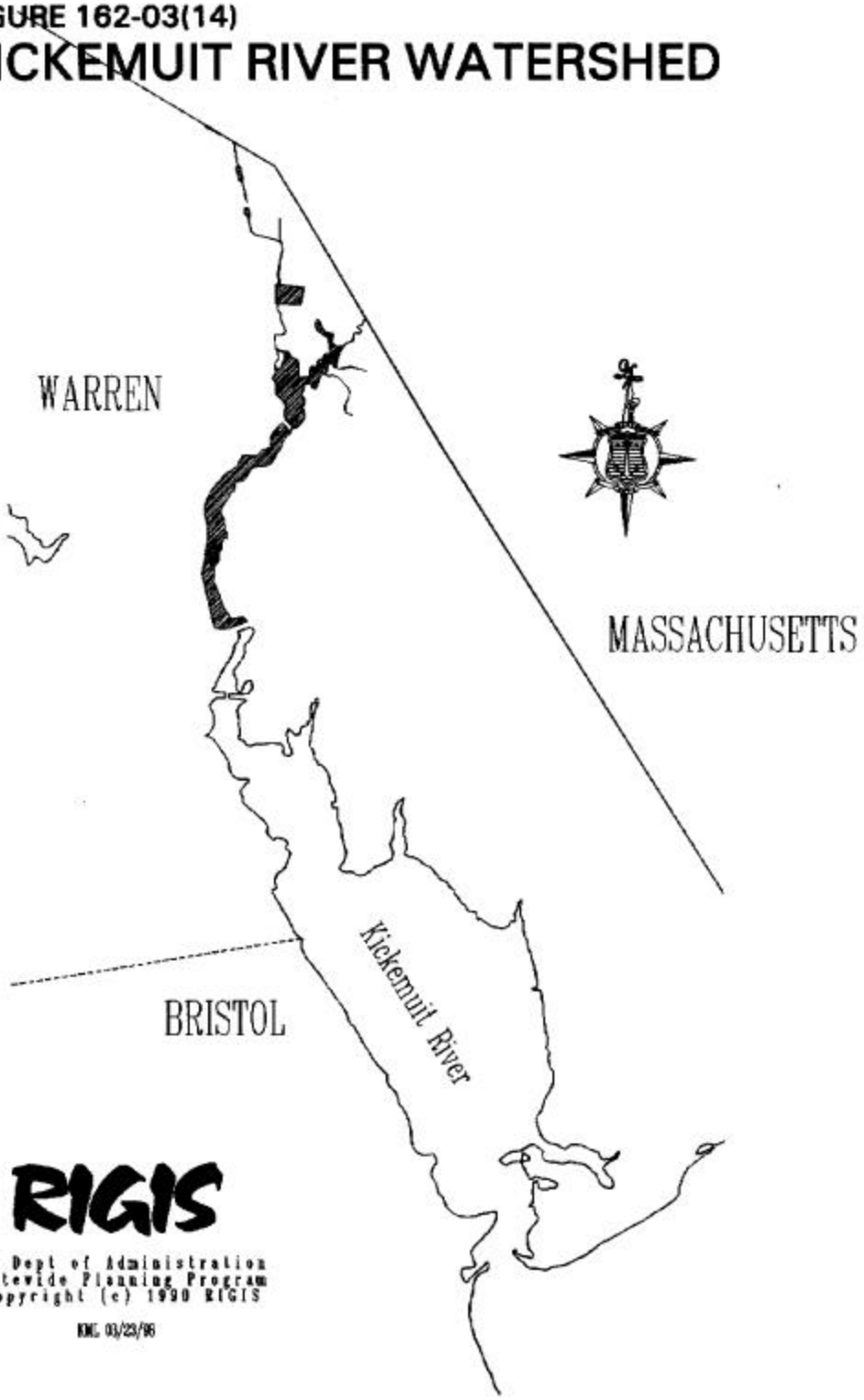
The Kickemuit Watershed is located in the eastern portion of Warren, Rhode Island, and in Swansea, Massachusetts (see Figure 162-03(14)). The Rhode Island portion of the watershed has salt and fresh water components; the fresh water portion of the Kickemuit River is a public drinking water supply. Priorities for the fresh water segment of the watershed include protection of the public drinking water supply, agriculture, and open space. However, the freshwater portions of the river are highly impacted by development and runoff from agricultural sites.The salt water areas of the watershed have recreational and scenic value. The Kickemuit River watershed is highly scenic and agriculturally important; agricultural best management practices are being implemented.

The Warren-Swansea area is suburbanizing. The stresses on the watershed are:agriculture, an historical use that needs to be respected and preserved; older development and its by-products, such as landfills that have been closed; and new suburban residential and commercial development. Based on citizen monitoring, there are indications that water quality is improving as a result of local efforts.

Overall, the watershed area is highly scenic and agriculturally important. The recreational and scenic value of the farms and watershed have been recognized by the Town of Warren. The community has noted that:

FIGURE 162-03(14)

KICKEMUIT RIVER WATERSHED



"....scenic views of rural areas and vistas of its waterbodies define Warren as a Town with a dual maritime and agricultural background that has retained the sense of solitude, peace, and independence that these occupations engendered." (Town of Warren, *Recreation, Conservation, and Open Space Plan*, 1990, p. 31).

Classification of the Warren Reservoir

1.The **Warren Reservoir** and its tributaries are a public drinking water supply. Although impacted by development, it has high habitat value. ***(Water Supply)***

03-03-15 Jamestown Reservoir Watershed

The Jamestown Watershed is in the center of Conanicut Island (see Figure 162-03(15)) and is transected by two of the island's main roads, Eldred Avenue and North Road. A four-lane highway (RI-138 connecting the Jamestown and Newport Bridges) was built through the watershed, which is the source of the public drinking water supply for the Town of Jamestown. Highway runoff was diverted in conjunction with the road construction.

The watershed contains historic farms and valuable wetlands. Together these constitute an exceptional cultural and scenic resource that is actively being preserved.

Classification of the Jamestown Watershed

1.**North Pond Reservoir** and **South Pond Reservoir** and their associated tributaries are a public drinking water supply that are threatened by runoff from roads and agricultural sites. The area has high habitat value south of the reservoir. There is also a historic farm and agricultural area. ***(Water Supply)***

03-03-16 Newport Water Supply Watersheds

The Newport water supply system obtains its source water from two watersheds, the Nonquit-Watson watershed in Tiverton and Little Compton, mainland communities in southeastern Rhode Island (see Figure 162-03(16a)), and the Maidford-Lawton-Bailey watersheds on Aquidneck Island in the communities of Middletown and Portsmouth (see Figure 162-03(16b)). The Nonquit-Watson water supplies are connected to the Newport system by a pipeline that crosses the Sakonnet River. The ponds and brooks of the Maidford River, Lawton Valley Reservoir, and Bailey Brook flow to Easton Pond for storage and intake to the water treatment facility. The Maidford River and Paradise Brook flow into Nelson Pond. Collectively, these watersheds comprise nine ponds and reservoirs and numerous streams.

FIGURE 162-03(15)

JAMESTOWN RESERVOIR WATERSHED

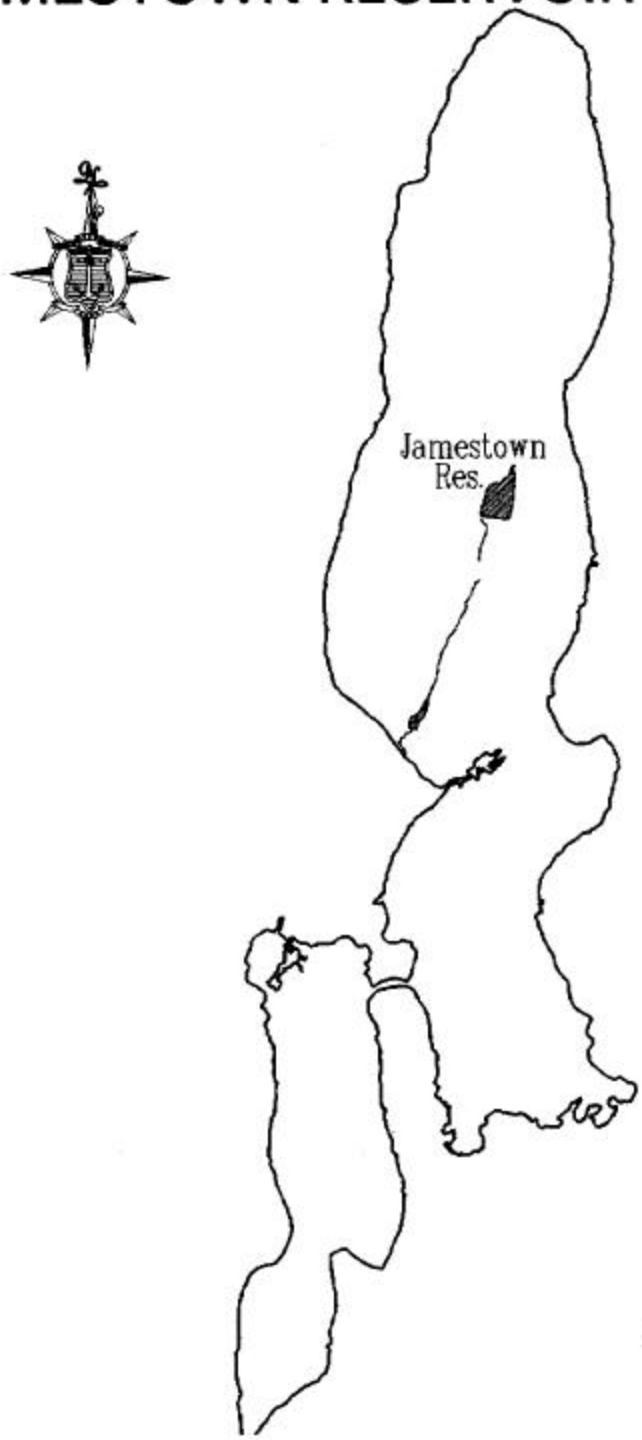


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FIGURE 162-03(16a)

NONQUIT-WATSON WATERSHED

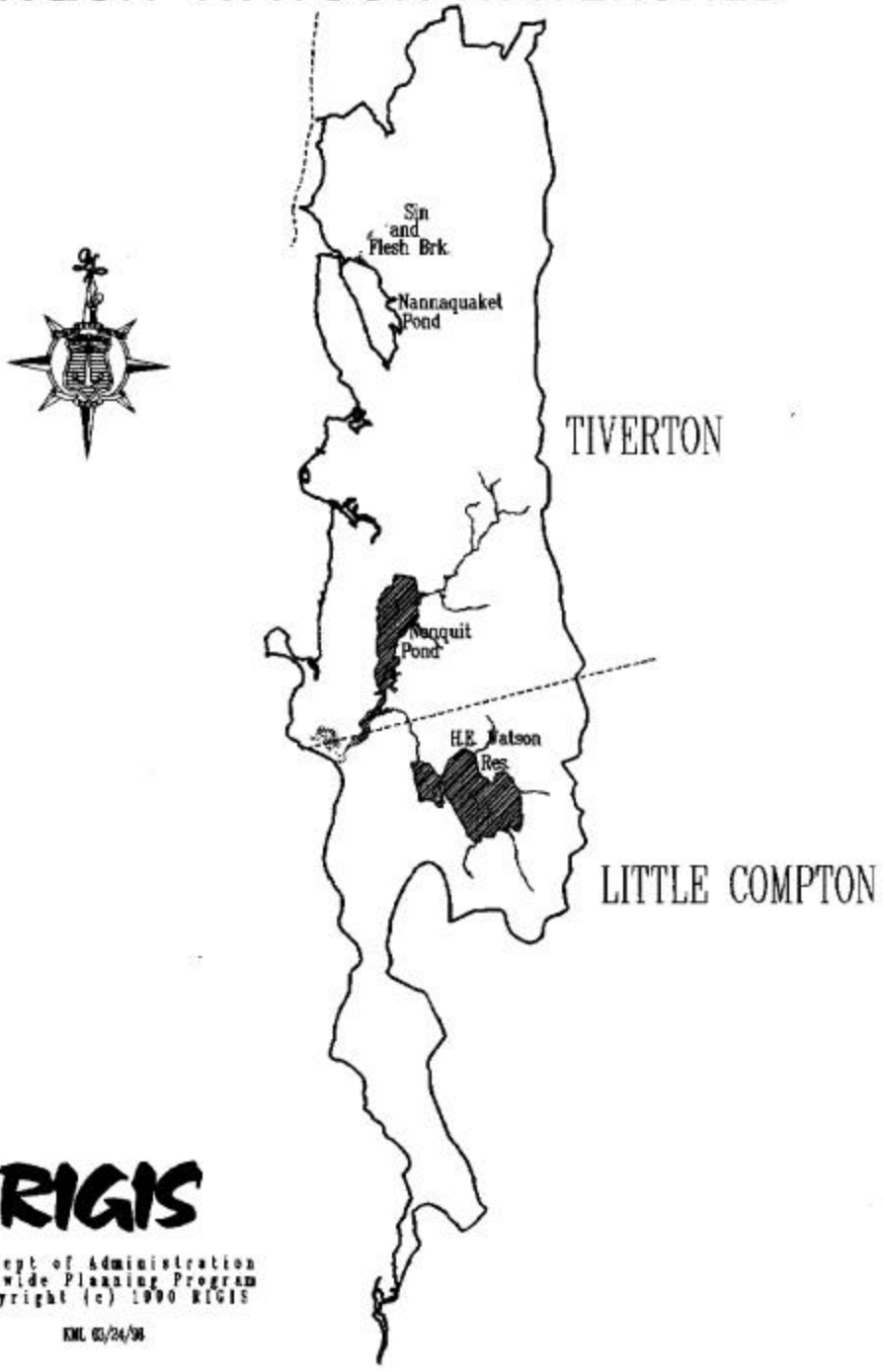
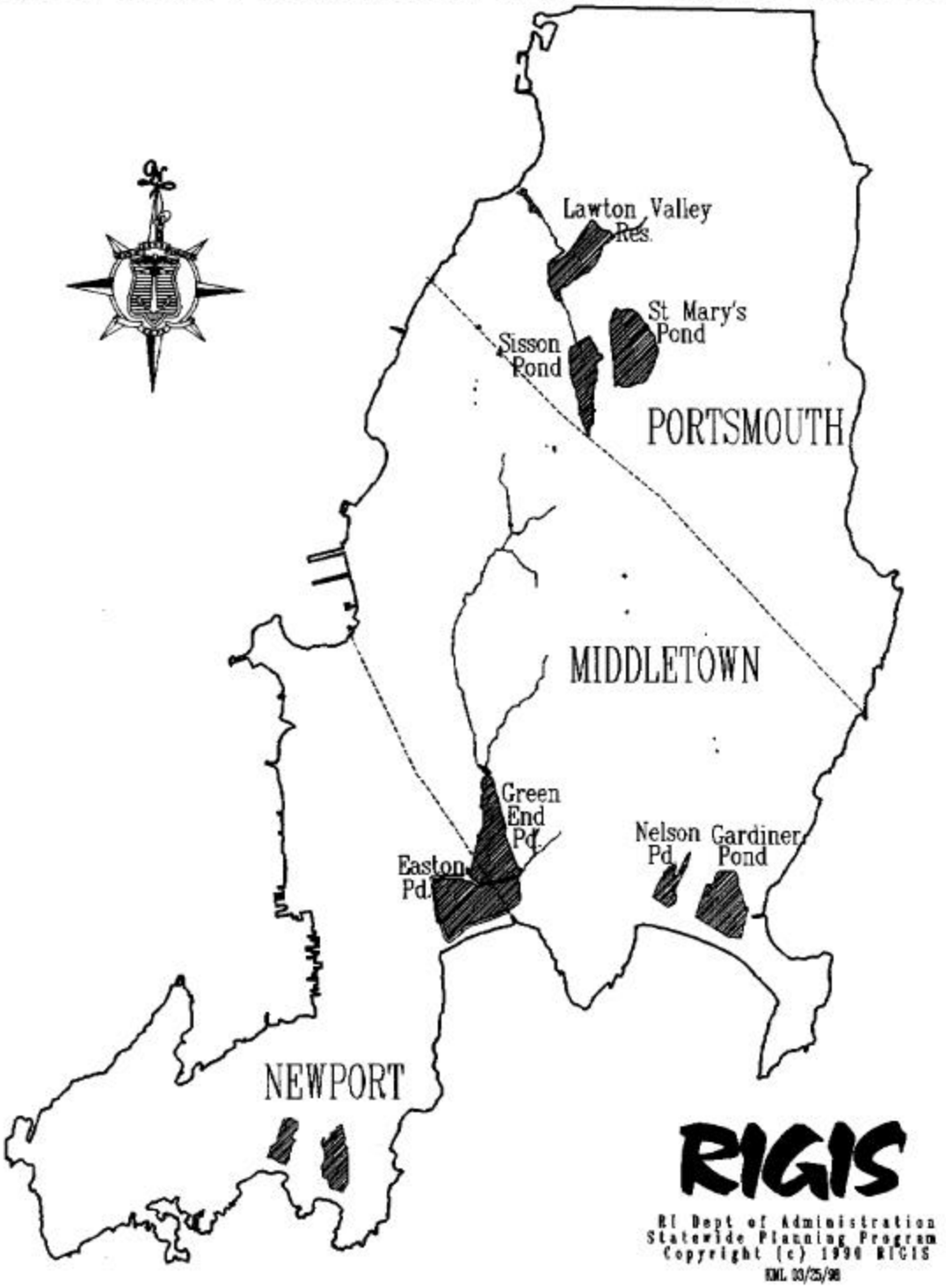


FIGURE 162-03(16b)

MAIDFORD-LAWTON-BAILEY WATERSHED



The DEM has found that the entire system "is either threatened or impacted by non-point source pollution -- namely agricultural, residential, and highway run-off" (RI DEM, *Nonpoint Source Pollution Management Plan for the Newport Surface Water Supply Watersheds*, June 1993, p.13). In southern Middletown and Newport, where development is densest, conditions adversely affecting water quality are the worst.

Both Aquidneck Island and Tiverton-Little Compton have historically important agricultural areas. Together, the reservoirs and agriculture constitute scenic and open space resources that contribute to the character of Newport County. The Natural Resources Conservation Service's (NRCS) Eastern Conservation District is actively promoting agricultural "best management practices" within the watershed. Saint Mary's Pond is stocked with trout, and fishing from shore is permitted.

Segment Classifications in the Newport Water Supply Watersheds

1.The **Maidford River** to Nelson Pond is a drinking water supply athough stressed by nutrients. The area is agricultural, as well as the location of the Norman Bird Sanctuary. ***(Water Supply)***

2.**Lawton Valley Reservoir, Sisson Pond,** and **St. Mary's Pond** are elements of the Newport water system. They have scenic value, high habitat value, and provide open space. ***(Water Supply)***

3.**Bailey Brook, Green End Pond**, and **Easton Pond** are drinking water supplies and have scenic and open space values. There is residential and commercial development, as well as agricultural activity in the vicinity of Green End Pond. ***(Water Supply)***

4.**Nelson Pond, Gardiner Pond,** and **Paradise Brook** are components of the Newport water system. There is residential and commercial development, as well as agricultural activity in the vicinity of Nelson Pond. ***(Water Supply)***

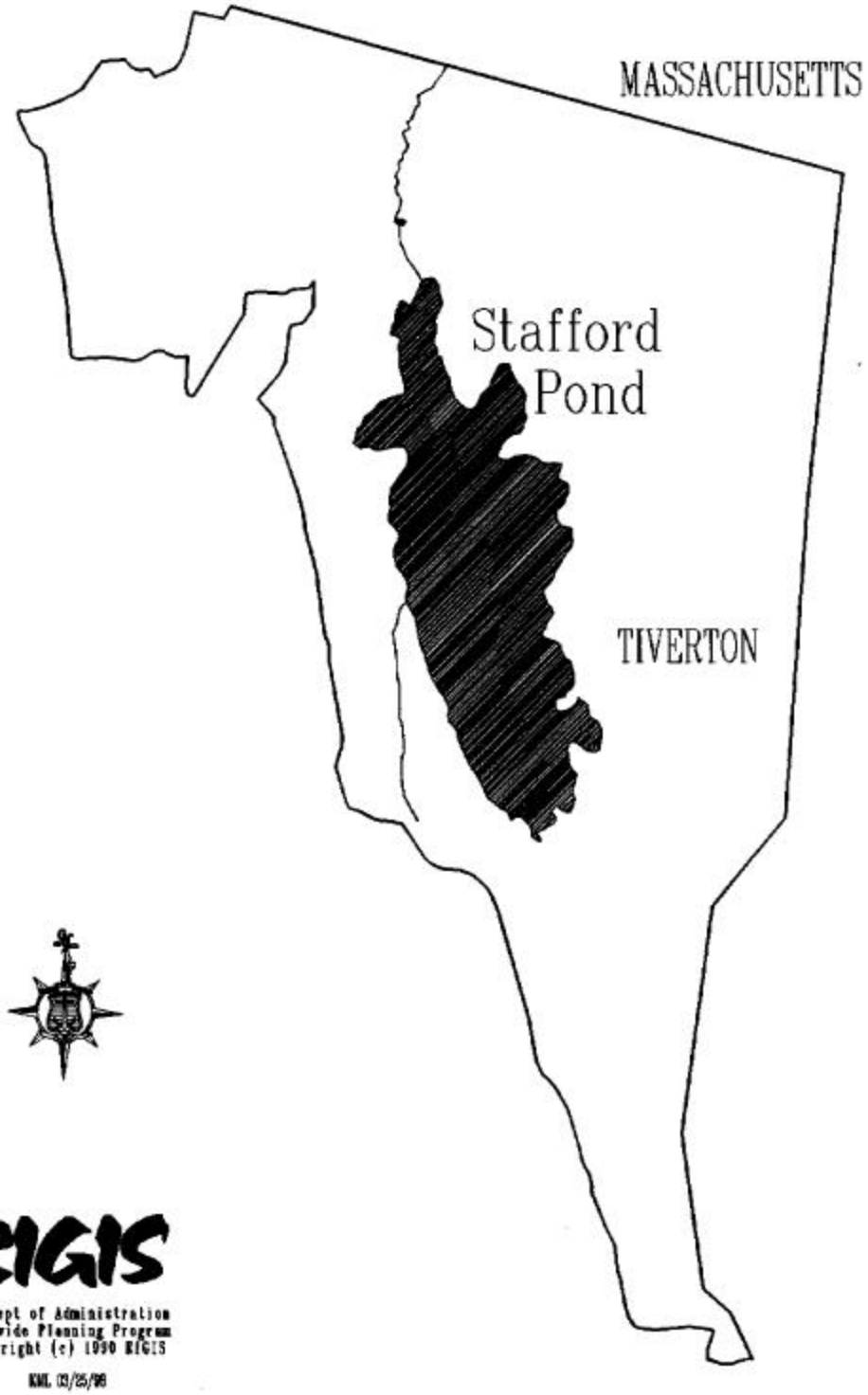
5.The ponds and brooks of the **Nonquit Pond** and **H.E. Watson Reservoir** watershed are pristine public water supplies of the Newport water system. Nonquit Pond has scenic and high habitat value. Watson Reservoir also has scenic value. ***(Water Supply)***

03-03-17 Stafford Pond Watershed

Stafford Pond watershed is located in Tiverton and has a total area of approximately 1,400 acres with a drainage area of approximately 900 acres (see Figure 162-03(17)). The western and northwestern portions of the watershed are predominantly undeveloped. The eastern and northeastern shorelines of the pond have been extensively developed with residential and water-related commercial development.

FIGURE 162-03(17)

STAFFORD POND WATERSHED



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According to an NRCS soil assessment, most of the watershed has "severe" constraints for individual sewage disposal systems (ISDS) due to wetness or slow percolation rates. Although water quality remains suitable to support its use as a public drinking water supply, the potential for contamination exists due to failed septic systems, as well as agricultural, boating, and other recreational uses.

Classification of Stafford Pond

1.**Stafford Pond** is a public water supply, with recreational open space contact uses and high habitat values on the undeveloped northwest side of the pond. There is also a dairy farm in the vicinity of the pond. It appears that Stafford Pond is less protected from degradation than any other public water supply body in the state. ***(Water Supply)***

03-03-18 Block Island Watershed

Block Island's watershed is composed of a number of small ponds (see Figure 162-03(18), that are part of a sole source aquifer system. The island has high-quality habitat areas and a great deal of land dedicated to conservation. The local commitment to preserve the island's unique natural resources is strong, and preservation of water quality in the ponds contributes to meeting this objective.

Classification of the Block Island Watershed

1.**Sands Pond** and **Fresh Pond** are public drinking water supplies and high quality habitat areas. ***(Water Supply)***

2.The balance of the **Island's ponds** are pristine, as critical habitat areas. ***(Pristine)***

FIGURE 162-03(18)

BLOCK ISLAND WATERSHED